UNIVERSITY OF BIELEFELD
Faculty of Health Sciences
School of Public Health

THE APPLICATION OF COMMUNITY ORIENTED PRIMARY CARE (COPC) APPROACH ON ASSESSING PSYCHOLOGICAL STRESS AMONG ARAB MIGRANT WOMEN IN THE CITY OF COLOGNE/GERMANY

Dissertation submitted for the fulfillment of the award of the degree Doctor of Public Health (Dr.PH.) at the School of Public Health, University of Bielefeld, Germany

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March, 2006

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(Dr. PH.)

DECLARATION

This dissertation is the result of an independent investigation. Wherever the work is indebted to the work of others it has been acknowledged and sited.

I declare that this dissertation has not been accepted in substance for any other degree, nor is it concurrently being submitted in candidature or achievement of any other degree at any other university.

Maesa Irfaeya

Bielefeld, March 2006

DEDICATION

I dedicate this dissertation work to my family whose love and thirst for knowledge continues to inspire me till today, especially to …..

My parents for opening my eyes to the world, and for installing the importance of hard work and higher education;

My sisters and my brothers for their ongoing and endless inspiration and encouragement;

And to all my old and new teachers who enriched me with knowledge and skills to be capable to be on the path of education and research.

To them I say: "The harvest is not always unseen …"

ACKNOWLEDGEMENTS

This dissertation would not have been possible without the support and input of several people and institutions. Although I would love to mention each one's name, I am afraid that I will miss someone.

First, I am confident that I could not have had better supervisors to guide my work. My first supervisor, Professor Dr. Alexander Krämer deserves special mention. Under his tutelages, I have not only grown as an academic, but I have also grown as a person. His encouraging guidance and experience in research in general and on migrants in Germany in specific were of great input throughout the period of my study. I thank you for your faith in me that always made me move ahead. I wholeheartedly thank my second supervisor, Professor Dr. Annette Maxwell from the University of California, who has great experience in the field of cancer research with different immigrant communities in the United States. I thank you Annette for editing my English in the dissertation and for clearance of vision on my study and your rich comments. I greatly thank Dr. Hajo Zeeb for his invaluable feedback and encouragement throughout my work.

I am thankful to the Faculty of Health Sciences at the University of Bielefeld for the logistic support throughout my work. Special thanks are due to Ms. Regine Myska for all secretarial and administrative assistance. I owe special thanks to Dr. Rafael Mikolajczyk for his guidance and assistance with regard to the statistical issues throughout the analytical work. I also thank Ms. Nadine Reinhold at the Faculty of Psychology for her great assistance, explanations and provision of materials on how to score stress using the Symptom Checklist 90-Revised instrument.

Other thanks go to Dr. Taysir Abdallah at Al Quds University in Palestine for providing me with the Arabic version of the Symptom Checklist-90-R instrument, and with whom I consulted on the scoring procedures.

It has been a great opportunity to work with the Begegnungs und Fortbildungszentrum muslimischer Frauen e.v. (BFmF) (The Muslim Women's Educational Center) in the city of Cologne. It has been a wonderful experience to work with its team and members. My special gratitude is due to Mrs. Erika Theissen, the director of the center who welcomed with extreme enthusiasm the idea of the study from the beginning and for providing all the possible logistical facilities and materials. I deeply thank all the staff at the center for their incredible cooperation and welcome which has made the work throughout all the study much easier; I would like especially to thank Jamila, Karima, Ayten, Nadya, Türkan, Emine and Sabine. Other thanks are to the office of statistics and the office of health in the city of Cologne for providing me with the information and statistics I needed for the study.

My warmest thanks are to all the Arab women who I interviewed throughout the study. I thank them for their gracious interest and devoting their precious time in the pilot test, in the focus groups, in the questionnaire, and in the intervention and evaluation parts. Without them, the study would not be put on ground. I also thank all the key informant interviewees who provided rich information about the situation of Arab migrants in the city of Cologne and in Germany.

I do not forget that I owe many thanks to my friend and previous lecturer Dr. Fitzhugh Mullan at the George Washington University in Washington D.C. for his unique experience in the field of COPC. I knew Dr. Mullan as a lecturer, writer and researcher through my study in the United States. I deeply thank him for availing himself as a mentor for applying the Community Oriented Primary Care (COPC) approach as a pilot experience in a Ph.D. dissertation, and I also thank him for his continuous follow up and constructive feedback. His words and ideas continue to inspire me throughout my studies.

Going through the trip of this study has been accompanied with the encouragement and support of many friends. My warm thanks to my friends in Palestine, Germany, the Netherlands, Sweden, the United States, South Africa, and in the United Kingdom. I owe special gratitude to some friends and colleagues in Bielefeld,

especially to my friend Mrs. Brenda Kreis for her great assistance in translating some required material from German into English and for her special support; to my friend Dr. Micheal Conzen for his kindness and thoughtfulness; and to my friend Corinna Eimkemeir for her great encouragement and assistance whenever needed. I also would like to thank Mrs. Neslihan Akbulut-Belmahi, and Mrs. Brigitte Franken in Onsabrück, family Köker in the Netherlands, family Tawze in Cologne and family Inçe in Bergkamen who were welcoming to me during my stay in Germany.

My grateful and particular thanks to my parents, sisters and brothers for their trust in me in every step I went for; my everlasting thanks to you for your continuous inspiration and encouragement.
I finally would like to thank the German Academic Exchange Service (DAAD) for sponsoring my study in Germany.

Cordial and sincere thanks to all who made my dream of having my Ph.D. degree come true!!!

MAESA

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AOK	Allgemine Ortskrankenkassen
ANOVA	Analysis of Variance
ANX	Anxiety
ARIC	Anti-Racism International Center
BFmF	Begegnungs und Fortbildungszentrum muslimischer Frauen e.V.
BKK	Betriebskrankenkassen
BPR	Basic Priority Rating
BSE	Breast Self Examination
BZgA	Bundeszentrale für gesundheitliche Aufklärung
CHD	Coronary Heart Disease
CI	Confidence Interval
COPC	Community Oriented Primary Care
DEP	Depression
EEA	European Economic Area
EU	European Union
Fr	Frequency
F test	Fisher test
GAS	General Adaptation Syndrome
GP	General Physician
GRC	General Assembly of the Red Cross
GSI	General Severity Index
HOS	Hostility
ICD-10	International Classification of Diseases, 10^{th} Edition
IKK	Innungskrankenkassen
ILO	International Labour Organization
IMR	Infant Mortality Rate
INS	Interpersonal sensitivity

LKK	Landwirschafliche Krannkenkassen
LzZ	Landeszentrum für Zuwanderung (Land center for moving people)
MMR	Maternal Mortality Rate
N	Number
NHS	National Health Services
NRW	North Rhine Westphalia
O-C	Obsessive compulsive
OECD	Organization for Economic Cooperation and Development
OPR	Overall Priority Rating
OR	Odds Ratio
PAR	Paranoid ideation
PEARL	Propriety, Economics, Acceptability, Resources and Legality
PHO	Phobic anxiety
PSDI	Positive Symptom Distress Index
PST	Positive Symptom Total
PSY	Psychoticism
RR	Relative Risk
SAD	Seasonal Affective Disorder
SCL-90-R	Symptom Checklist 90 Revised
SHF	Sickness Health Fund
SOAP	Subjective, Objective, Assessment and Planning
SOM	Somatization
SPSS	Statistical Package of Social Sciences
TB	Tuberculosis
UN	United Nations
UNICEF	United Nations International Children's Fund
US	United States
WHO	World Health Organization
WIAD	Wissenschaftliches Institut der Aerzte Deutschlands e.V. "Scientific Institute of the German Medical Association"

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"There is more than a verbal tie between the words common, community, and communication.... Try the experiment of communicating, with fullness and accuracy, some experience to another, especially if it is somewhat complicated, and you will find your own attitude toward your experience changing".

- JOHN DEWEY (1870)

CHAPTER ONE

1 INTRODUCTION

This study explored psychological stress among Arab migrant women using the six-step approach of Community Oriented Primary Care (COPC). It does not intend to be a comprehensive study on psychological stress among migrant women, rather it intends to assess its levels, its associative factors and how it can be reduced using different methods among a sample of Arab migrant women in Germany.

The interaction between health and migration is a complex and a dynamic one that is influenced by the socio-economic and cultural background of migrants, their previous health history, and the nature and the quality of the health care situation that migrants had access to prior to migrating. This interaction may also be influenced by the circumstances surrounding migration, the social and the health characteristics of re-settlement[1]. Whether migration is planned or not, voluntary or forced, there may be some degree of stress involved with it as it can involve breaking with family, friends, and established social network, departing from traditional routines, value systems and accepted ways of behaving and having to adapt to new social and psychosocial environments. While migration may offer economic benefits, it can have some consequences such as physical health problems and psychological stress[2].

The range of health issues that can be associated with migration is inevitably broad. It includes communicable and non-communicable diseases, injuries associated with work environment and psychological problems. All or any of them can be debilitating to the health of migrants and their families, and can also have serious consequences for societies and communities into which migrants move and work in. Migrants are likely to experience some difficulties such as language barriers, lack of social support, home sickness and loneliness while getting used to a new culture and a new system. Thus, they might experience psychological problems, alienation and discrimination[3], which can negatively affect their psychological status.

Despite the potential magnitude of migration, psychological health of migrants remains poorly addressed in studies. Most of the previous studies on migrants examined the rate

of psychological disorders rather than psychological stressors; these studies were mainly conducted in the United Kingdom (UK) and in the United States (US)[4]. A few other studies were carried out in the Netherlands among Turkish and Moroccan migrants[5], and in Belgium[6]. Only one study by Häfner (1980)[7] assessed the prevalence of mental disorders among migrants in Germany. Although there has been an excess of the clinical and social research on women in many countries, migrants in general and Arab migrants in specific have received little attention.

The setting of the study was the Muslim Women Educational Center 'Begegnungs-und Fortbildungszentrum muslimischer Frauen e.V.' (BFmF) in the city of Cologne in Germany. The study used both qualitative and quantitative methods. Five focus groups (41 women) and 11 key interviews were conducted in the second COPC step of community characterization; an open group discussion meeting including 43 attendants was held in the third COPC step of prioritization; 116 women were the sample for the fourth COPC step of detailed assessment; of which 46 women participated in the fifth and sixth COPC steps of intervention and evaluation.

The study started by defining the community and the second step provided more information, views and attitudes on Arab migrants, health care services and health problems faced by them. In the third step psychological stress was identified as the problem with highest priority. In the fourth step, psychological stress was studied in details using a questionnaire including the Symptom Checklist-90-Revised (SCL-90-R) instrument. After analyzing the results in the fifth step, an intervention program was carried out including stress management courses, physical exercise, health education sessions and designing materials in Arabic language. This program was implemented among a subgroup of women who had previously been part of the fourth step. The last step of evaluation measured the outcome, process and structure aspects of the intervention activities.

This dissertation is organized in eleven chapters. The first four chapters provide theoretical data about the COPC approach; migration issue; and stress, culture, mental

health and migration. Chapters five to seven present the study aims, objectives and hypotheses; a theoretical model of stress; the study design, setting, population, sample and sampling, data collection methods, instruments and questionnaire, ethical considerations and analysis strategies. Chapters eight to eleven present the results and discuss them in light of the findings; conclusions and recommendations, and finally a summary of the study.

The study presents COPC approach as a practical strategy/approach to study community problems. Moreover, the study draws the attention to Arab migrant women who experience high psychological stress, either due to socio-demographic and health factors or to psychological factors including feeling negatively about being migrants. The intervention and the evaluation sections of the study demonstrate that stress management techniques, physical exercise and health education can reduce stress scores. The study presents several recommendations on various levels.

CHAPTER TWO

2 COMMUNITY ORIENTED PRIMARY CARE (COPC)

This chapter presents the COPC approach and provides an idea about its definition, history, principles, requirements, six steps, characteristics, its advantages and benefits, and obstacles facing its application.

2.1 Definition of COPC

COPC has been defined in different ways, but what is common among these definitions is that the COPC approach complements of epidemiological and clinical studies[8]. It has been described as a model of health service development that integrates public health and primary care in order to deliver targeted prioritized services to a defined population[9], [10]. Another definition has been as "a continuous process by which primary health care is provided to a defined community on the basis of its assessed health needs through the planned integration of public health practice with the delivery of primary care services"[11]. It is based on a set of principles that have been operationalized in different ways in different places. Haber (1996) summarized COPC as an interdisciplinary model for planning, implementing, and evaluating primary care, health promotion, and disease prevention in the community using a dynamic model[12].

2.2 The idea and History of COPC

COPC is an original model that traces it roots to the work of Sidney and Emily Kark and their colleagues, who set up an innovative socially oriented clinic and public health outreach program in a rural area of Natal in South Africa; specifically in the village of Pholela, in the early 1940s[13]. At that time, the organized primary health care proved to be inadequate to address the multiple health and disease problems of the community, so they implemented a strategy of community assessment/diagnosis, in which the entire

community was viewed as the "patient"[14]; and by this approach health professionals found that social, cultural, economic, and environmental determinants were more important factors affecting health than particular disease-causing agents[15]. The Karks also carried out surveillance work as well as training indigenous health workers who carried out surveys, staffed the clinic, and gradually took on increasing responsibilities training others in health work.

The main projects that the Karks worked on in South Africa were tracing the high prevalence of Syphilis and the widespread of malnutrition, and then after over a 10-year period, they left South Africa and settled in the USA, Israel and other countries[16], where the model underwent further development. Other figures, who pioneered COPC apart from Sidney and Emily Kark, are John Cassel, Guy Steuart, Harry Phillips, Eva Salber and Joseph Abramson[17]. Along the years, COPC has become part of many health projects and settings and even part of the education programs at different universities in the world.

2.3 Principles of COPC[18]

The concept of COPC is framed by a set of principles that includes the following:

- Responsibility for the health and health care of a population or community which implies that the primary care team must adapt to new situations to address the needs of the population, including the social determinants of health and diseases.
- Defined population, a fundamental aspect of COPC, which allows the COPC team to select a target population, the people to receive the COPC care.
- Definition of needs by the use of different disciplines and of quantitative and qualitative methods in epidemiological, behavioral and social sciences, and appropriate data collection methods to allow the health care team to detect the main health needs using high quality, valid, reliable data sources.
- Assessment of health needs to direct health care to address the identified needs of the population, over and above the demand.
- Care provided through community health programs.

- Integrated primary clinical care and public health, requiring: integrated responsibility for administrative issues under the same roof and by the same team with training requirements that provide all team members the exposure and skills to integrate both disciplines.
- A Continuing process.

2.4 Requirements of COPC

Based on the accumulated experience of Kark and Abramson, they have set five features they consider essential for COPC application[19], these are:

1. Complementary use of epidemiologic and clinical skills.
2. A defined population for which the service is responsible.
3. A defined program to address community health problems.
4. Community involvement in promoting its health.
5. Health service accessibility: in regard to geographic, fiscal, social and cultural terms.

Other literature summarized the requirements as the following[20]:

- Focusing on one problem at a time. This involves setting the problems, prioritizing them and then setting interventions for the chosen problem.
- Creating continuing cycles. This comes through implementing the set of interventions with the community and in turn, COPC becomes the framework or the philosophy of practice, providing a constant focus of the community and an ongoing awareness of projects for clinical improvements.
- Forming COPC team. This team will provide leadership for the activities. The team should be multidisciplinary and will take into consideration the various kinds of individuals working in the clinical setting. Understanding the community, and mainly its cultural framework and principle concerns, is a central and a required skill of this team. An epidemiologic approach, through surveys and analysis of clinical data, is also essential and complementary to the application of clinical skills. Knowledge of the health status helps in priority ranking. Thus, illness in individuals is not isolated from social and cultural environment.

- Involving the community. If there are community boards or community advisory groups, they should be involved from the outset of the process of the COPC. This envisions the maximum possible community involvement for the purposes of providing good input to decision making and enhancing the effectiveness of the interventions. It should be first pointed out that at Alma Ata meeting in 1978, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) together endorsed the policy of community-oriented primary care[21]. Moreover, this approach involved a recognition that, in line with the WHO's definition of health as far more than the absence of disease, health services should be responsive to health needs in the widest sense and should be flexible in their response to changes in these needs; and the health services' responsibility is to the health of all members of the defined community and the subgroups entitled to health care, irrespective of whether they seek it or not[22].

2.5 Steps of COPC

COPC model comprises six main continuous steps, which are community definition, community characteristics, prioritization, detailed assessment, intervention and evaluation. Nutting (1987) explained them as the following[23]:

2.5.1 Step one. Community definition

The word community is derived from the Latin "*communis"* or fellowship and means a body of people organized around a commonality such as a geographic, political, municipal, social, religious, or even health care entity. In a community development context, community can be usefully defined as a group of people who share an interest, a neighborhood, or a common set of circumstances. They may, or may not, acknowledge membership of a particular community. So, the community could be a geographically defined area, a health plan, a neighborhood, a school or a group of individuals registered to receive care at a certain clinic or center. The target population could be defined by

location (e.g., school or workplace), by health problem (e.g., hypertension), age group (e.g., elderly, infancy), or risk group (e.g. teenage pregnancy).

2.5.2 Step two. Community characterization/diagnosis

Community characterization involves collecting information, assessing resources and needs, and identifying problems at the community level, and hence it means assessing the community as if it were the patient. It includes geographic, demographic, economic, historical, and cultural information, health and social services available to members of this community, and their health status. Opinions about health issues can be gathered from key informants in the community or through focus groups. Quantitative and qualitative data are usually used to describe the community and its characteristics[24]. This step will result in a list of health problems in the defined community that will then be prioritized and intervened on.

A. Quantitative data/secondary data

These will be on different aspects which are:

- The community setting characteristics: history, location, geography, politics, housing, environment, sanitation, and transportation.
- Socio-demographic characteristics: population's age, sex, occupations, income, social class, education, ethnicity, and religious affiliations.
- Health services: the setting/clinic, insurance, referrals, health personnel, health facilities, and other health services provided for the same population.
- Health status: mortality, morbidity, somatic characteristics, behaviors, hospital discharge data, clinic diagnoses, and special surveys.
- COPC team formulation: this includes the staff working at the center or clinic and any other interested active parties in the community.

B. Qualitative data/primary data

Data gathered for the specific purpose of developing the COPC process may be needed and can be collected to construct a profile of the practice or the area. This includes

opinions, beliefs, and attitudes that are gathered through in-depth interviews with key informants and focus groups.

The target population may include patients and staff of the clinic, community leaders or other community members. Other sources of information could be key informants, such as individuals holding certain positions or jobs in the community (teachers, pharmacists, storeowners, librarians). The members of the clinic or center are themselves an excellent source of information since they know the practice and in some cases are also members of the community. This process not only provides information about the health status of the community but also involves the whole staff and members of the community in the process of developing the COPC practice. It should be pointed out that the model of the COPC uses a problem-oriented approach. If health professionals decide to view the community as patient, then the clinical methods of individual diagnosis (SOAP) can be applied to community diagnosis as Nutting (1987) explained[25].

The definition of the COPC incorporates that in addition to the biomedical knowledge required to carry out clinical care, one must include epidemiologic and behavioral science in order to achieve a complete understanding of the community (community diagnosis)[26]. By this, the health professionals will have a broader view about the community from different aspects, and this will in turn provide a more comprehensive characterization about that community.

2.5.3 Step three. Prioritization

From the set of problems identified in the step of community diagnosis, one problem will be chosen for intervention. The community members and the COPC team will assist in the prioritization process using a semi-quantitative method[27]. What distinguishes COPC from most practice-based audit is its starting point. Traditionally, doctors choose which health concerns they address first, but COPC uses a more objective community profiling exercise[28], which plays a central role in setting priorities.

Public involvement can be thought of as existing along a broad spectrum, as indicated in Box 1. At one end, individual patients can engage in personal decisions about their own treatment pattern and perhaps improve the overall pattern of particular services. In the

latter capacity, they may be best thought of as acting in an extended or proxy consumer role[29].

- Ethos/values of health system
- What healthcare services/treatments should be provided
- How and where health services are to be provided
- Non-medical aspects
- Individual choice of treatment

Box 1. Levels of public involvement in the National Health Service in the United Kingdom
Data source: Priority setting and The Public, 2000

2.5.3.1 Methods for priority setting

Given the orientation of priority setting, or the notion between choosing between one activity and another, one can choose between either the quantitative or the qualitative methods. However, many priority setting exercises involving the public would benefit from using a combination of qualitative and quantitative approaches.

A. Qualitative methods can produce a more in-depth understanding than quantitative methods and allow for exploration of complex issues.

The major *qualitative methods* used in priority settings are:

- In depth interviews.
- Focus groups.
- Standing panels.
- Citizens' juries.
- Public meetings.
- Rapid appraisal.
- Repertory grid.
- Vignettes or scenarios.

B. Quantitative methods include the Hanlon method and Vaughan and Morrow's method.

1. Hanlon Method[30]

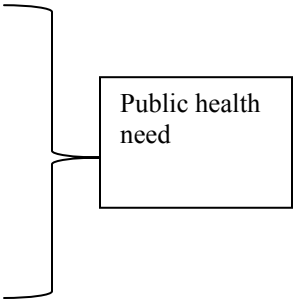
This method starts with listing all the problems that have been identified and analyzinges them using the formula that consists of four components:

Component A = Size of the problem

Component B = Seriousness of the problem

Component C = Effectiveness of intervention

Component D = PEARL (Propriety, Economics, Acceptability, Resources, Legality)



The formula then appears as:

Basic priority rating (BPR) = (A+B)C/3

Overall priority rating (OPR) = (A+B)C/3 *D

The range of scores for each of the four components is decided as follows:

A = 0 to 10
B = 0 to 20
C = 0 to 10
D = 0 to 1

Component A-size of the problem

The size of the problem may be scored by the use of rates or the percentage of the total population at risk for the problem under consideration. It is defined as the total number of persons having the problem or being directly affected by the problem expressed in rates per 100,000 population. Since there are many problems that will be defined in terms of comparatively small demographic groups, it was arbitrarily decided that the size of problem be scored according to the following scale (see table 1).

Table 1. Scoring method for the size of problem (component A)

Units per 100000 population	**Score**
50, 000 or more	10
5, 000 to 49,999	8
500 to 4,999	6
50 to 499	4
5 to 49	2
0.5 to 4,9	0

Data source: Public Health: Administration and Practice, 1990

If the problem is defined in terms of the population of a large city, the following scale will result and apply (see table 2).

Table 2. Scoring method for the size of problem in a large city

Population in city (component A)	Score
1,000,000 or more	10
100,000 to 999,999	8
10,000 to 99,999	6
1000 to 9,999	4
100 to 999	2
Less than 100	0

Data source: Public Health: Administration and Practice, 1990

Component B- seriousness of the problem

It is defined in terms of four factors: urgency, severity, economic loss, and involvement of people. The terms are all subjective, and several iterations of the process will be necessary before the group can agree on the rating of this component. The component of seriousness is assigned a range of 0 to 20 in the formula. Each factor of seriousness is assigned a range of 0 to 10. It is possible to obtain the maximum score of 20 for seriousness even though only two factors contribute to it. It is possible to attain a score of 40, which exceeds the range, but it is rare that the combination of the factors accumulates to that extent.

As stated above, the factors related to the seriousness of the problem are urgency, severity, economic loss and involvement of people. Urgency can be used to define the emergent nature of the problem; Severity may encompass estimates of the case fatality rate or the seriousness of the disability if the problem is rarely fatal. Economic loss is related to severity and may reflect both community costs or losses and family costs. The involvement of other people is related to the other factors as well and is most frequently an issue in rapidly contagious diseases such as measles in a non-immunized population. If the total score exceeds 20, it is arbitrarily truncated to that level. Table 3 summarizes this method of scoring.

Table 3. Scoring method for the seriousness of problem (component B)

Factors comprising seriousness	Range of score
Urgency Public concern Public health concern	0 to 10
Severity Mortality Morbidity-degree and duration Disability-degree and duration	0 to 10
Economic loss To individuals To community	0 to 10
Involvement of people Potential- number of persons who may acquire problem or be affected by existing problem Indirect-number of persons affected socially, economically, psychologically,… etc. and relative degree of involvement	0 to 10

Data source: Public Health: Administration and Practice, 1990

Component C -effectiveness of intervention

Effectiveness is often difficult to measure. This component involves the difficult field of evaluation for which valid measuring devices are largely yet to be developed. If the program reaches only 20% of those with the problem and is only 70% effective, then the effectiveness is .20*.70 = .14 or 14% and the rating would be quite low. Effectiveness is a multiplier in the basic priority rating formula, so its impact is powerful.

Component D- PEARL

It includes a group of factors not directly related to the actual need or the effectiveness of the proposed intervention, but which determines whether a particular program or activity can be carried out at a specific time:

P = Propriety

E = Economics

A= Acceptability

R = Resources

L = Legality

Each of these qualifying factors is given a value 0 or 1, and since together they represent a product rather than a sum, if any one of them is rated 0, it not only gives PEARL a total rating of 0 but also makes the OPR (Overall Priority Rating) score 0.

2. Vaughan and Morrow's Method[31]

A priority chart is another method for organizing health information in order to decide on priorities. As seen in table 4, each health problem is given a simple score for its relative importance (based on its frequency, morbidity and mortality); for the effectiveness of the possible interventions; and for the costs of these interventions. The total score for the three aspects determines the priority of each intervention.

Table 4. Priority chart scoring by aspect according to Vaughan and Morrow

Aspect	**Score**		
	+	++	+++
Relative importance of disease	Low	Moderate	High
Effectiveness of interventions	Ineffective	Moderate	Very effective
Cost of intervention	high	Moderate	low

Data source: Manual of Epidemiology for District Health Management, 1989

It is assumed that priority should be given to diseases or underlying health problems that are frequent, severe and cost high morbidity and or high mortality, and against which there are effective and cheap interventions.

2.5.3.2 Public participation in priority setting: commitment or illusion?

The current health plans concentrate much on taking the opinion of the public in consideration. The document of Local Voices in the United Kingdom (1992)[32] stressed that it was not only that the voice of the consumer to be heard, but also the views and opinions of local people:

'local people's views should be used…to help establish priorities'

There is a lot of debate on why and whether the views of the public should be included, who could or should be consulted, what sorts of views should be included, and how they should be incorporated into the decision-making structure[33].

Research has shown that patients and members of the public are becoming more knowledgeable about health care and are making more demands. At the same time, health care purchasers feel increasingly exposed as they are responsible for many of the decisions about the allocation of resources for local health service.

2.5.3.3 What is/ who are "the public"?

A variety of forms of the public could be asked to inform priority setting, ranging from the total population (citizens), or a sample of this, to specified community representatives (such as counselors, general physicians), or consumers (patients). It is clear that some individuals and groups will have strong and particular views about health services. These include those involved in health care provision, such as paramedics, purchasers, representatives or groups with a special interest in a disease or a service, such as charities, patients or users, and politicians. All these different groups are likely to bring different views and preferences to the bargaining table, and it is highly likely that the composition of the public will influence the outcome.

2.5.4 Step four. Detailed assessment

After the COPC team has chosen the health problem to be addressed, there is the need to focus on a more in-depth analysis of the selected condition as a basis for planning the intervention. This involves the collection of additional data about the nature and extent of the problem and the factor and determinants related to it.

This step also involves gathering information to:

- Develop community-specific data on the selected condition.
- Obtain baseline data for surveillance and evaluation of the program.
- Decide on the type of intervention and for planning the intervention.

The scope of the detailed assessment is determined by the needs of the service regarding the prioritized health condition. The collection of the information may not be exhaustive in a first step and can be complemented subsequently. The information gathered at this stage will rely on the use of epidemiological methods and skills and also on behavioral sciences methods and skills.

2.5.4.1 Planning the detailed assessment

This part includes defining the population, assessing the health status, determinants and outcomes of health, and data collection.

A. Definition of the population

The first step is to consider whether the assessment will be performed on the *entire population* or *on certain sub-groups*, such as children, adolescents, adults over 25 years, seniors or pregnant women. This decision is related to the selected health condition. For example, anemia can be assessed among infants, pregnant women or the elderly; a program dealing with smoking may be addressed to adults or to young adolescents before they start smoking.

Then, there is the need to decide whether information will be collected on all members of the population (or defined sub-groups) or from a sample chosen to represent the population. This decision will be based on the size of the population, the resources available and the health problem addressed.

B. Assessment of health status, determinants and outcomes

This step entails the definition of what is to be known about the prioritized health condition and its determinants. This will comprise the objectives of assessment. The distribution of the selected health condition should be assessed with reference to the relevant characteristics of the population including (among others): age, gender, education, occupation, religious preferences, family structure. The distribution should also be analyzed regarding risk factors or determinants of the health condition.

C. Methods of data collection

The methods will vary in accordance with the selected condition and the resources available. There are quantitative and qualitative methods to gather information.

1. Quantitative methods. These include:

- Surveys (relying on self-administrated questionnaires or interviews).
- Review of records: clinic/hospital/mortality.
- Clinical examinations.
- Laboratory tests, Electro cardiogram, etc.
- Observations.

These methods will provide quantitative information on the health condition and its distribution. These will be the baseline numerical data (incidence or prevalence rates,

proportions, measures of associations) to assess the changes to be affected in the intervention. The planning of the detailed assessment should include a detailed plan of analysis. This can help the team identify groups of people at higher risk and in need of special intervention, the identification of risk factors, and community syndromes.

2. Qualitative Methods. These include:

- Focus groups.
- In-depth interviews.

A review of the literature is necessary in order to find instruments and classifications that are reliable, tested and validated. For any data collection instrument, it is important to pretest or pilot it to confirm the feasibility of using it in the field and its acceptability by the members of the community. Literature reviews can help the COPC team find useful information on instruments to collect the data as well as information for program planning.

2.5.5 Step five. Intervention

The nature of the problem will determine the specifics of the intervention, such as its duration, location, and required resources. It should be a feasible and a resource practical intervention. A successful intervention benefits from the input of community members of different age, ethnic, gender, socioeconomic groups and diverse types of professionals, students and community representatives. The intervention plan includes identifying measurable objectives for reducing a community health problem or its risk factors; establishing a time frame for accomplishing the initial objectives; and focusing on health education, disease prevention or health promotion[34]. Assessment of past efforts of the practice in regard to the chosen problem should be done. COPC team should also perform literature search and general exploration related to the selected problem to determine "best practices" or interventions that have been carried out elsewhere on similar problem and with what success. The following steps are required in selecting the intervention(s):

2.5.5.1 Examining previous local experience: what is being or what has been done?

The planning should consider the experience of the team and the prior activities performed by the clinic or other organizations regarding the selected condition. The

COPC team also needs to investigate the past experiences of the practice, and the experiences of other agencies and organizations, and the community. They may also be involved in the common effort to improve the health of the community.

2.5.5.2 What else can be done?

This stage will rely on available knowledge and experience about effective interventions. Few practices will select problems for intervention that have not been identified as priorities by other communities and clinical teams. On virtually any health condition, there is a literature and set of experiences that will inform and guide the COPC team in the design of the intervention. The COPC team also needs to explore the feasibility of implementing the intervention program in terms of its cultural, political and social acceptability. The resources available to the team in terms of personnel and facilities (physical plan, equipment) have to be assessed.

2.5.5.3 Targeting the intervention

The COPC team can focus the intervention on all members of the defined population or on initial sub-groups such as users of the center, and continuing the program with those who don't use it; starting in a defined area close to the clinic and extending the program to the rest of the area served by it. This will depend on the health condition, the type of intervention planned, the capabilities of the practice and the resources available. Eventually, the program can be expanded to cover other members of the community.

2.5.5.4 Defining the objectives of the intervention

Choosing the specific objectives of the intervention builds on information collected during the detailed assessment. The objectives must be formulated in measurable terms, i.e., what the program intends to achieve in a specific period of time in terms of health goals. For example, a program addressing tooth caries in children may set a goal of reducing the prevalence of caries by 40% in a period of 3 years. The objectives must be feasible and adapted to the realities of the health service and the community.

Objectives may also be defined as short term and long term, what the program intends to achieve within 2 years and within 5 years or any suitable length of time. The

improvement in health (i.e., decrease in caries prevalence) and the length of time it will take should be established according to what is known to be achievable in a certain period of time. This knowledge is obtained through the literature, experience, and knowledge about the community and the practice.

2.5.5.5 Intervention activities

Each program objective must have an accompanying program activity. It is important to distinguish between the program objectives (what we want to achieve) and its activities (what we are going to do to achieve it).The timing and frequency of the activities should also be determined in advance of implementation while allowing for flexibility to address the changing needs in the community and the health care service.

Activities may take the form of environmental modification, advice on healthy practices, provision of medication, provision or renting of equipment, etc. These activities can be done through personal contact, group activities, outreach, mass-media campaigns, etc. They can be clinic-based or community-based and should be addressed to the whole target population and not only to those who visit the clinic or center.

2.5.5.6 Record system

The planning of the intervention should also include the establishment of a system of records that will enable the health team to keep track of the health status of individuals and of the community in which the program is being carried out as well as the performed other activities.

2.5.5.7 Resources

Prior to the start of the intervention, resources that will be needed for the different aspects of the intervention program should be listed and secured. This includes manpower, materials (educational aids, stationery, etc.) and equipment (scales, syringes, audio-visual aids, and laboratory) needed for the development and implementation of the program.

2.5.5.8 Timeline

A timeline should be outlined and adhered to. This helps individuals involved in the process to plan their time frame of involvement and to keep the program moving forward at a reasonable pace.

2.5.6 Step six. Evaluation

This step is important to determine the utility of the intervention and to help in the process of considering future interventions. The evaluation is an ongoing process and an essential ingredient of the effective intervention. It should be periodic to identify the progress in achieving the objectives[35].

The purpose of the evaluation is to provide information about what was achieved as a result of the intervention program. It provides the COPC team and the community with the empirical evidence of the degree of effectiveness of the program and the advisability of continuing or modifying the program. It provides information on what worked and what did not, and it analyses whether the use of resources was justified and whether resources were efficiently allocated.

2.5.6.1 Types of evaluation

There are three types of evaluation, which are as follows:

A. Process evaluation

The process of the program or the performance of activities, according to the criteria established in the planning stages, should be measured. The process evaluation addresses issues such as the extent to which measurements (e.g., weight and height) were carried out compared to that stated in the intervention protocol, or the actual vs. anticipated attendance at group sessions to promote breast feeding, or attendance at exercise classes to reduce low back pain. Other measurements can be done, such as the assessment of the coverage of the population in a newly implemented immunization program, the utilization of offered services (car seat loan program), or the degree of compliance with advice (taking iron supplement, doing physical activity, making changes in the home to reduce injuries among the elderly) or instructions (referral to hospital).

B. Structure evaluation

This refers to those aspects of the program related to the service itself, including the physical setting, facilities and equipment. The availability and accessibility of the services, the barriers to utilization (geographical, physical, economical, cultural, etc.), and the accountability of the program staff should also be evaluated at all levels (field workers to program coordinator, coordinator to COPC team, COPC team to the health service administrator, etc.).

C. Outcome evaluation

This refers to the extent to which the stated objectives of the program are achieved or the effectiveness of the program. For example, did the intervention activities reduce malnutrition or increase breast-feeding? Effectiveness should be distinguished from efficacy, which deals with a specific intervention and its degree of beneficial results under ideal conditions. Effectiveness refers to the actual achievement of goals in the targeted population. The harmlessness of a program should also be evaluated. This entails assessing whether the implementation of the program had caused any adverse effects on the health and well being of the community.

Other aspects of the evaluation that should be taken into account are efficiency of the program, satisfaction of the community and the team about the program, and differential values which is that the program has an effect among different sectors of the population such as with high and low levels of education, young and old, …etc.

2.5.6.2 Methods of evaluation

There are two methods of evaluation which are:

A. Program review is a method used when the team assumes that the activities performed produce a beneficial outcome. The performance of this type of evaluation may include before and after surveys where the community acts as its own control. The effectiveness of the program (how well the objectives were attained) can not be assessed formally since a given change may have occurred in the community without the intervention due to factors not related to the intervention, such as a media campaign on the same subject of the intervention or a decision by the local government to implement some interventions through different institutions.

B. Program trial is a method used when the team needs to demonstrate the effectiveness of the program. Trials are experiments or quasi-experiments that seek to appraise whether the outcome of the program is due to the specific intervention and not extraneous factors. Results of this type of evaluation can be used for decision making on the applicability of the type of program to other settings.

The evaluation can be carried out on the total population or on a representative sample of it. If a sample was selected for the baseline data collection then the same sample can serve for the purpose of the evaluation. Alternatively, a new sample can be drawn. Figure 1 summarizes all the steps of the COPC approach[36].

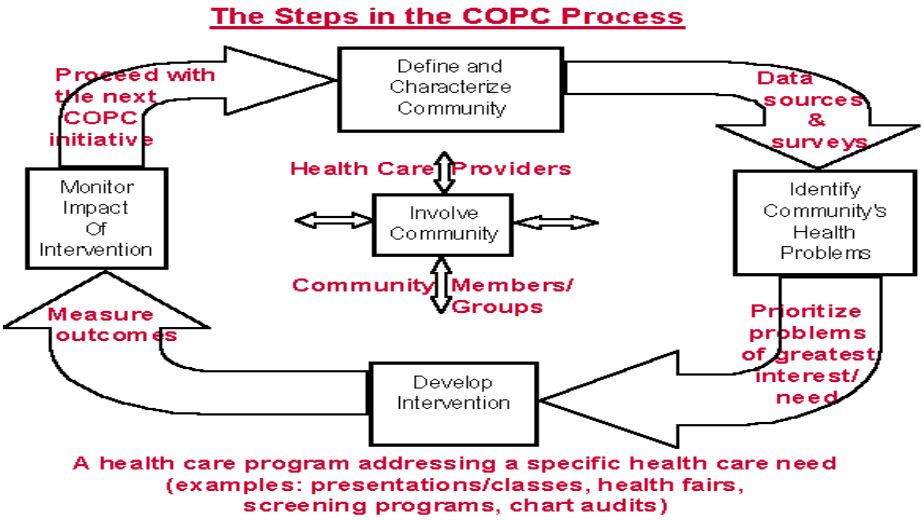


Figure 1. COPC six steps model summary: community definition, community characterization, prioritization, detailed assessment, intervention development and evaluation
Data source: COPC: Health Care for the 21st Century, 1998

2.6 Characteristics of COPC

COPC is a systematic approach to health care based on principles derived from epidemiology, primary care, preventive medicine, and health promotion that has been shown to have positive health benefits for communities in the world[37]. What is unique about the COPC approach is its use of a bottom-up approach instead of a top-down approach, and this in turn mobilizes the community to be more active and thus plays a role in community empowerment and development.

As has been previously mentioned, the concept of community participation has received the attention of many organizations working on health in their programs, such as the United Nations Children's Fund (UNICEF)[38], and there are also other organizations such as the Organization for Economic Cooperation and Development (OECD)[39], and the World Bank[40]. It could be that the community participation has different means according to the perception of individuals, but the concept itself relies on having an input from the community.

Kark and Joseph Abramson characterize COPC as a "strategy whereby the elements of primary care and of community medicine are systematically developed and brought together in a coordinated practice[41]. These are clarified in the following points:

- Although community development and social change are not explicit goals for COPC, they are implicit in its emphasis on community organization and local participation with health professionals in the assessment of health problems[42], and this tackles the first part of the approach term, which is "community oriented".

  A critical element of the Declaration of Alma Ata in the emphasis on primary health care is the involvement of people, not just the support and functioning of health services, but more importantly in the definition of health priorities and allocation of scarce health resources at the district level[43].

  The assessment of health needs in the past was usually only based on epidemiological surveys; and there continued to be an emphasis on gathering quantitative data. In a new development, many health authorities have begun to seek the views of local people about their health and this has provided an opportunity to engage with local communities about issues that they see as affecting their health[44].

  One of the greatest benefits of community involvement must be the recognition of individuals as "whole people" rather than as, simply, "patients" or "service users"[45]. The community is not only the subject of the study, but also participates in designing that study. Effective community development and health work need to involve change; and this change can be at four separate but linked levels[46]. The change on one level will affect the other levels. These levels are:

- Individual change: this occurs through the increased skills, knowledge, confidence and opportunities opened to people when they are involved in community development and health work.
- Collective change: it is concerned with changes that move beyond benefiting individuals and affect a whole geographical community or at least part of that community.
- Social change: it is the change aimed by the national health authorities to influence the life style of the people, such as smoking, exercise …etc.
- Organizational change: it is concerned with developments in relation to the organizations and agencies which work in a community, or provide services on a wider range.

o Another characteristic of COPC is that it provides a simple format for a collaborative exercise in quality improvement and management, a term that the Karks did not use; this term involves analysis, intervention, and evaluation in an ongoing cycle. It is well designed for application to primary care and can bring increased levels of effectiveness and community participation to the health delivery enterprise[47].

o It has also been shown that COPC attracts more professionals for the following reasons[48]:

- Provides a strategy for defining and addressing a target population.
- Offers a context for the practitioner to expand beyond the focus of the examining room, and to consider the larger population.
- Provides a mechanism for tracking the extent and severity of health problems in the community.
- Offers a set of strategies and techniques that can assist the clinician in assuming leadership role by dealing with the priority health problems in the community.
- Helps primary health-care teams acquire skills to identify and respond better to the needs of the local population[49].
- Leads to a deeper sense of satisfaction with the practice of primary care.

- In an educational setting, it offers the structure for defining and exploring the health problems of a population that leads to an appreciation of the breadth of common problems that present to a primary care practice.

- The strength of the COPC idea is that it appeals to both practicality and to principle. On one hand, practicality argues for coordination between public health strategies and primary care delivery despite the fact that many health care systems have grown up without collaboration between these two vital forces. Prevention, early intervention, and health promotion all require a functional overview of a practice's population. The current concept of "population health" argues that practitioners need to have broad views of health trends and disease patterns, even when practicing with individual patients. Managing care in any system with limited resources requires that practitioners have some sense of disease patterns, costs, and benefits. COPC invites this thinking. On the other hand, COPC appeals on a principled level because it envisions community participation in health care decisions; it creates opportunities for consumers to participate in decision making about health care delivery. This kind of systematic democracy is not a feature of traditionally hierarchical systems of health care, but provided a measured, practical way to factor citizen input into local decision making on health care policy[50].

2.7 Advantages and benefits of COPC application

There is a growing support for COPC in the current years both in developed and in developing countries. The practical benefits of COPC are described as a broadened clinical perspective, introduction of a public health perspective into family practice, and promotion of collaborative and preventive work[51].

In the COPC practice, the physician accepts responsibility for improving the health of the whole community, and community members accept responsibility for becoming involved in improving services and maximizing the health status of the whole population[52], and this in turn enriches and raises the status of health promotion strategies and preventive

work. And COPC has the advantage that, while the focus of primary health care is usually the individual patient, it has the focus on the community and the individual.

An inventory of data from local neighborhood COPC practices in South Africa, Israel, the United States, Canada, and Wales provides evidence for the effectiveness of the COPC approach. And while it advocates the use of existing primary care and community resources and may prove to be cost-effective means of targeting individuals at risk of serious health problems, it can also be a method of risk identification and risk reduction technique which flows in the heart of public health.

The successful experiences of applying the COPC approach in different health settings has led to teaching the approach to physicians, nurses, health service administrators, and community organizers from all over the world. This has resulted in the dissemination of the approach to different countries.

Based on research carried out by Zweifler and Gonzalez (1998), they concluded that doctor residents should learn the principles and practices of cultural competency, public health and COPC in order to effectively communicate with their patients[53].

The exploration of the COPC model in the United Kingdom suggests that the COPC model creates an educational approach relevant to all the team members, helps practitioners identify patterns in disease, illness and health; develops the practice's capacity to combine population care with personal care; supports and develops teamwork processes; and extends audit to explore the whole practice population[54]. Moreover, COPC is a module that is taught to medical students, nurses and other health professionals as part of the curriculum in different countries around the world. It is even part of the Internet based teaching curriculum in the UK[55].

2.8 Obstacles that could face COPC application

The development of a COPC program or practice is not without obstacles. The problems could vary according to the practice session and can fall in the following categories[56]:

- Difficulty in defining the community, mainly the suburban communities that are served by a multitude of practices and health programs.
- Practitioners may find limited set of resources that can be directed to the COPC activities.

- Insufficient support from the members of the health staff.
- Limited data that do not identify and characterize the health problems of the target population.
- Lack of skill, knowledge, and experience in the principles, strategies, and methods of COPC.
- Lack of quantitative tools and techniques that are feasible for COPC activities in most primary care settings.
- The mechanisms of reimbursement do not support the additional activities of COPC.
- While the general methods exist in the principles of epidemiology, demography, biostatistics, health services and evaluation research, and in several of behavioral sciences, they have not been well adapted for use in the primary care setting.

Therefore, the challenge facing it includes issues such as integration of curative, rehabilitative and preventive care, involvement in programs of community development, and financial and social accessibility require coordinated linkages across a range of social sectors in addition to health, as well as a motivated team. These will become apparent when efforts are made to operationalize COPC on a large scale with successful and local projects[57].

In conclusion, COPC is a powerful approach in the field of public health in different clinical settings in the world. The application of its main six steps is a challenge facing the clinical care in the perspective of involving the community in deciding about their health problems to be worked on by the health system.

CHAPTER THREE

3 MIGRATION

This chapter provides a background about migration, its definition, causes, stages, as well as migration as an issue in the world. Few indicators are described with regard to migrants in Germany. Other issues related to the access of migrants to health care and the response of care services to their health needs are also presented in this chapter.

3.1 Definition of migration

The word migration has a Latin origin "Migratio" which means "out". The verb "migrate" means "to move" and the "immigrant" means "the person who moves". Immigration stands for the movement to a country for the purpose of permanent residence[58]. The expression "migrant" is associated with movement, so one can leave the country of origin and move to other countries in the world and might also go back to the country of origin. The international idea about migrants includes all persons who leave their residence country and cross the borders to other countries.

There is no agreed definition of what a migrant is. As summarized by Decosas and Adrien[59] "migrants may be defined by their legal status or ethnicity, or migration can be categorized using parameters of duration, motivation, and distance. If we exclude short-term visitors, the most important categories are labor migration, refugee migration, resettlement migration, internal migration and commuting". Each country uses its own definition in its regulations as to categories of travelers and migrants. International law distinguishes between people who are and are not national, e.g. citizens, aliens, immigrants, and recognizes other specific categories, e.g. refugees, asylum seekers and migrant workers[60]. So it is important to differentiate between the term foreigner (a person who is from a foreign country) and migrant (a person who moves from one country to another and stays there at least for some time).

Although migration always played a meaningful role, it has other political and socioeconomic important circumstances[61]. The frequency of migration forms extends

from tourism and trade trips that make yearly around 475 millions to work migration and refuge[62].

Krämer and Baune (2004)[63] define migration as a movement that leads to a change of residence for individuals or groups over a considerable distance. International migration is characterized by the shift of residence outside the borders of the home country. According to the definition of migration, ethnic Germans who have lived for a long time in other countries and return to settle in Germany (Aussiedler) should be considered migrants. However, since they receive the German citizenship after entering the country, they do not appear as a separate group in statistics of population structure, education or criminality…etc. Instead, they are lumped together with Germans born and raised in Germany. On the other hand, children who are born in Germany and whose parents or grandparents migrated to Germany appeared until recently in all statistics as foreign migrants. However, according to the definition of migration they do not fulfill the criteria of migrants. Other sources explain that children who are born to foreign parents in Germany acquire the German nationality at birth, provided that one of the parents has been a habitual resident in Germany for 8 years and has unlimited right to residence, or has been in possession of a permanent residence permit of three years. If those children also have their parents' nationality, they must decide between the German and foreign nationality on coming of age[64]. Finally, people of diplomatic service as well as people in foreign army services and illegal people are not included as immigrants in official statistics. For all these reasons, immigrant statistics in Germany can only be estimated.

3.2 Causes of migration

People move for all kinds of reasons: business, pleasure, fleeing from political persecution or armed conflicts, economic underdevelopment, overpopulation, war, civil war, dictatress, religious conflicts, seeking a better life for themselves and their children. Other reasons could be ecologic destruction/environmental catastrophes, or economic politics that leave no other choice for people except to migrate[65]. This movement may not involve the crossing of any borders. So, people's movement tends to follow opportunities[66].

Another reason for migration is the unequal division of goods and the differences in living standards between countries[67]. Most of the current 120-180 million migrants (around 85%) stay in the poor neighboring countries. Only few persons (around 15%) manage to get accepted in the country of their choice.

Some countries are major senders of migrants, some major receivers and in many cases countries are both senders and receivers of migrants. The International Labor Organization (ILO) stated that in 1990, over 100 countries were major senders or receivers of migrant labor, with 68 countries listed as major receivers, 56 as major senders, and 24 as both sending and receiving countries[68]. Italy, Japan, Malaysia and Venezuela were noted to be among the new receiving countries, and Bangladesh, Egypt and Indonesia among the new major senders. It is important to note that women make up an increasing proportion of migrant workers.

It can be said that migrant flow is a physical expression of the economic, demographic and political inequality in the world[69]. The regulation of international migration is considered as a political duty and the increase in the number of migrants and the ethnic diversities is perceived as a problem in Europe. In west Europe, migrants form an increasing part of the population and most migration today is for family reunification, family formation and intra-European movement of technical and professional personnel[70].

3.3 Stages of migration

Literature has shown that migration goes through three main stages, which are[71]:

1. Uprooting
2. Migration
3. Integration in the new society

As for the first stage, the sudden or the planned uprooting, leaving the familiar network and culture, leaving behind friends and family, may represent traumatic life events.

The second stage may be hours of travel by air, land or sea, or in case of refugees, it may include years of living, with uncertainty, loss of autonomy and control over one's life, sometimes living under constant threats and humiliation.

The third stage describes the migrant as a new comer. In most cases, he or she will be at the bottom of the social ladder, with little support and strong pressure to adapt, to change one's habits to do everything a little different. Often, at the onset, the migrants consider themselves lucky to have arrived in a new society, but sooner or later a period of depression, resentment or feeling of bereavement dominate until, after several years, one hopefully stabilizes as a well-adapted citizen of the host society.

Another way to describe the process of migration is these four stages[72]:

1. Curiosity, euphoria, extra idealization.
2. Sobering, critical coping phase: this could lead to stress diseases (functional and psychosomatic disturbances), multicultural identity coming from the view of "old" and "new" identity.
3. Sadness on loosing the worth and value of country's culture.
4. A new bicultural identity is formed with an incomplete coping.

3.4 Migration issue in the world

In 1995, the World Bank estimated that at least 125 million people lived outside their country of origin[73], other estimates show that there are around 130 million people who are migrants[74], and recently according to the United Nations (UN), there are 175 million people who live outside their country of birth[75]. Every year, over one million people emigrate permanently and in most years, nearly as many seek asylum[76].

Work migration is a world wide phenomenon with an economic-political motivation for movement. This form of migration is voluntary, although there is social and economic pressure for people to move. The debate surrounding the new world migration has been subjective and marked by the impression that all the world's refugees and work migrants were pouring into the rich industrial countries. Salt (1997)[77] estimates that migration has been a key force in the demographic changes that have taken place in 12 out of 24 countries in Western Europe during the 1990s, including Germany. From 1995 to 1996 for example, there were about 19.6 million foreign nationals residents in Western Europe. Of these nearly 33% were from other European Union (EU) or European Economic Area (EEA) countries and Switzerland. There were 1 million from central and Eastern Europe,

4.7 million from other parts of Europe (mainly Yugoslavs and Turks), 3 million from Africa and 1.7 million from Asia.

In the year 2000/01, most migrants lived in Germany (7.3 million=8.9% without counting the ethnic Germans "Ausiedler"), followed by France (3.3 million=5.6%), Britain (3 million =3.9%), and Switzerland (1.5 million =20.1%). Other major immigrant countries are Italy (1.3 million =2.2%), Belgium (0.9 million=8.3%), Spain (0.8 million =0.2%), Austria (0.7 million= 9.1% and the Netherlands (0.6 million =4.1%)[78], see figure 2.

The UN has estimated that women and girls have accounted for a very high proportion of all international migrants for a long time rising to 49% in the year 2000. By the year 2000, there were 85 million female migrants versus 90 million male migrants. In Europe for example, the percentage of female migrants among the total number of international migrants remained at 48% from 1960 to 1980, and slightly increased to 51.7% in 1990 and to 52.4% in the year 2000[79].

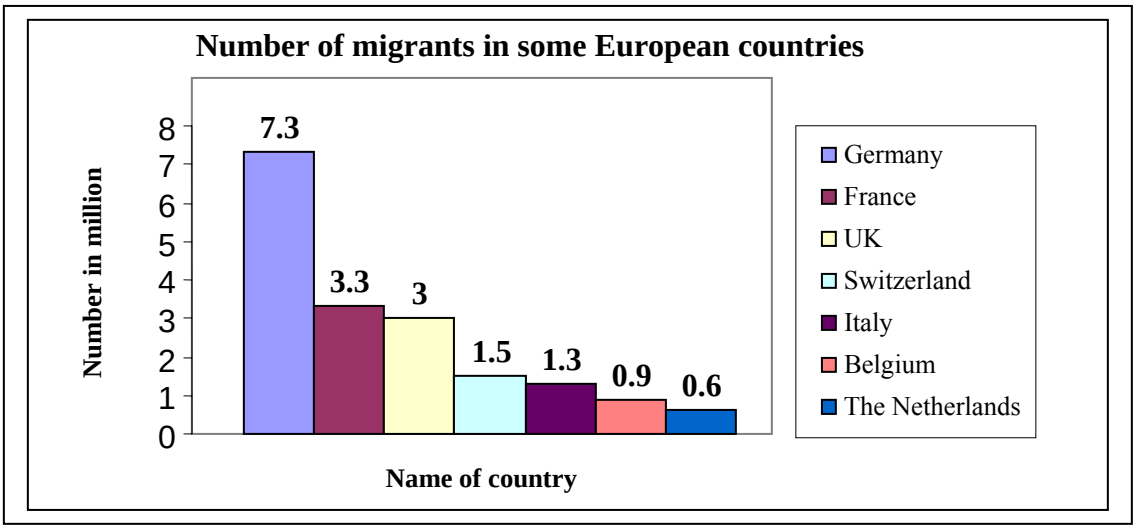


Figure 2. Number of migrants (in million) in some European countries
Data source: www.berlin-institut.org, 2005

Arab migrants in the world

As the sample of this study was from Arab origin, there was the need to collect some data about Arab migrants in the world and mainly in European countries. Throughout history, Arab emigrants formed many Diasporas in continents in the world. The main countries of emigration are in order of percentage[80]:

- Yemen, Jordan and Lebanon (over 20% of the population).
- Egypt and Syria (10-20%).
- Morocco, Algeria, Tunisia, Mauritania, and Sudan (3-10%).

The main countries of immigration in the Arab world are countries of the Gulf Cooperation Council and Libya, of which the migrants form more than 50% of their population. Outside the Arab world, the largest Arab communities live in Europe and North America. Arabs in the United Kingdom, Europe and the United States total some 12 million people many with respectable professions and establishments. The European country with the largest number of Arab immigrants is France with approximately 7 million Arab speakers, mostly from North Africa and Lebanon. The number of Arab immigrants in Germany is between 280,000 and 350,000, while the United Kingdom hosts 210,000 Arabs (other sources estimate Arabs to be 500,000)[81] and Belgium hosts approximately 150,000. Other European countries with significant Arab communities include Spain, Italy, Denmark, the Netherlands, Sweden, Belarus, Romania, Bulgaria and Turkey.

In North America, there are about 3.7 million Arabs and in Latin America there are about 16 million people of Arab descent[82]. In Australia, the 2001 Australian Census indicates the presence of 213,940 people from Arab countries.

3.4.1 Historical background of migration to Germany

Germany has become one of the main migratory destinations in Europe. Officially, almost 9% (7.3 million) of the population is composed of migrants[83], while the proportion of foreign-born inhabitants in the population as a whole was 8.9% at the end of 2002[84]. The net migration rate in Germany was 4.01 migrants/1000 population in 2001 and reduced to 2.18/1000 population[85].

The history of immigration to Germany after the World War II can be divided into four periods[86]. These are:

- The years from the end of the War to the early 1960's were characterized by the post war migration flows which were triggered by the massive disruption caused by Europe's two world wars. Until about 1950, the flows consisted mainly of displaced people of German ethnicity originating from Eastern Europe.

Thereafter, West Germany was affected by migration of ethnic Germans from Eastern Europe leaving the Soviet occupation zone in the East having arrived there from Eastern Europe, and of German originating directly from this eastern part of Germany[87].

- The second period from 1955 to 1973 was characterized by labor migration within Europe from the Mediterranean to the northern countries. During this time, Germany actively recruited "guest workers" from several selected European countries (Italy, Greece, Turkey, Portugal and Yugoslavia), as well as from Morocco and Tunisia.
- The middle of the 70's, especially the year 1973, constituted a fundamental regime switch, a development which was triggered by the first oil crisis and the ensuring economic problems that followed. The recruitment of guest workers was stopped and immigration was restrained. Only two major channels of legal immigration to Germany remained: family reunification and applying for asylum. In that period, the average length of stay increased and the gender distribution became more balanced. The number of second generation immigrants, children born in Germany to foreign parents, increased dramatically. The increase in size of the immigrant population and its tendency to settle down led to growing concerns about its integration and its ethnic and cultural impacts on German society[88].
- The fourth period started at the end of the 1980's with the dissolution of socialism and has led to an increased inflow of people from Easter Europe. In addition, the civil war in Yugoslavia has triggered a new surge of refugees and asylum seekers migrating to Europe. Other immigrants came from Afghanistan, Lebanon, Yugoslavia and Palestine and other African countries who came due to war or civil wars[89].
- In addition to refugees, asylum seekers and foreign workers, ethnic Germans (Aussiedler) are another source of immigration. They are mainly from Eastern Central Europe and Eastern Europe as well as the former Soviet Union. Between 1950 and 1987, 1.4 million came to Germany, primarily from Poland and Romania, and the number of Aussiedler has increased over the subsequent years.

In 1990 these numbers peaked at 397,000. Between 1988 and 2004, a total of 3 million Aussiedler came to Germany. Since the middle of the 1990s, the number of those arriving usually has declined due to legislative changes such as the introduction of a quota system and fluency in German as a condition[90]. Since 2005, family members must prove that they have adequate fluency in German[91].

Most of the migrants in Germany came from Italy, Spain, Portugal, former Yugoslavia, and Turkey as well as from Morocco and Tunisia. At the end of 2003, one third of foreigners had been living in Germany longer than 20 years and two thirds more than 8 years. The distribution of migrants in the different states in Germany varies. For example, Berlin has many Turkish migrants[92]. Since 1970, around 3.2 million foreigners have attained the German nationality. The state North Rhine Westphalia (NRW) has around 2 million foreigners which is about 11.2% of the total population.

The number of Moroccan migrants in Germany has increased over the years. In the year 1968, the number was 18,000 then increased to 26,000 in the year 1975, then to 43,000 in the year 1982, and to 62,000 in the year 1990 and to 98,000 in the year 1998. The year 2004 showed a decrease to 73,000 Moroccans[93].

Information regarding the reasons for immigration to Germany is limited, and may include different development of economic activity, unemployment rates and other socio-demographic factors, as well as political oppression in the country of origin[94].

3.5 Specific related indicators to migrants in Germany

This section covers main demographic, labor force, socioeconomic, health, psychiatric and psychological, and substance abuse indicators.

3.5.1 Demographic indicators

The age distribution in Germany has been shaped by immigration history- variations in the magnitude of immigrant influx and typical age at immigration and demographic behavior. While 31.7% of the Germans are above the age of 55, only 11.5% of the non-Germans are in this age group. On the other hand, 25.1% of the Germans are under 25-

years old compared to 39.1% of non-Germans. In particular, it is difficult to assess whether migrants' demographic behavior tends to adapt quickly to that of the indigenous population. On average, the second generation of immigrants is considerably younger than the first generation which is younger than the native population. Moreover, the majority of first generation immigrants were in their prime age, i.e. in the age group between 15-35 years, at the time of entry to Europe[95]. Fetig and Schmidt, 2001[96] also report that the majority of immigrants concentrated in the two southern states of Baden-Württemberg and Bayern as well as in the largest state Northrhein-Westphalia.

The largest first generation immigrant groups are Turks, followed by Yugoslavians and immigrants from the other European guest worker countries (Italy, Greece, Portugal and Spain). For the second generation, Turks form the largest group followed by members of the European guest worker countries.

3.5.2 Labor force indicators

The share of the second generation migrants reporting higher schooling degree is lower than that of native Germans and that of the first-generation migrants. And as for the type of work, both first and second generation migrants typically perform manual work in the German manufacturing industry as well as in the food and beverages sector and the construction sector[97].

Occupational health and safety is of great importance. Migrants tend to move into low-skill jobs that have low social status and are unattractive to local labor forces. Sources of employments for migrants are construction, heavy industry and agriculture, which are heavy and high risk jobs. Language differences, poor communication with employers, lack of familiarity with modern machinery are risk factors that make immigrants vulnerable to accidents[98]. In Germany, non-German children between the ages of 5 and 9 years are more vulnerable to traffic accidents and other injuries than their German peers[99]. The right to healthy working and living conditions, the right to health education, and the right to affordable and accessible health care are three examples of rights that governments should guarantee for their migrant populations.

3.5.3 Socioeconomic indicators

The socio-economic status of most migrants is low, leading to poor living situation and smaller living spaces. Their work in industry and in the services sector is characterized by low qualifications, low payment, unfavorable working conditions, shift-work, and physical and mental stress. Their living conditions can be characterized by poor housing with overcrowding and unfavorable location (traffic noise, emission from industrial plants). Finally, they are more and more confronted with a changing social atmosphere (e.g. racial and discriminatory aspects) which leads to a feeling of permanent threat to their safety and health.

The precarious situation is aggravated by mass unemployment which is disproportionately high among migrants. With about 20%, the unemployment rate is twice as high among migrants as the total average. In their efforts to find professional training and jobs, young migrants are more disadvantaged than other young people[100].

Statistics among migrants show that the work income provides 62.4%, unemployment benefit 5.3%, pension 7.13%, support by parents and spouse 9.9%, other unemployment income 0.42%, social assistance program 12.8% and other benefits such as student grants 1.99% or their income[101].

3.5.4 Main health indicators

Health indicators suggest that migrants in Europe in general are at considerably higher risk for contracting a number of diseases than non-migrant populations in the same countries. Migrants in Germany have higher morbidity and mortality risks in comparison to German citizens. They have higher disease frequencies and infant deaths, and higher morbidity from psychosomatic, infectious diseases, accidents and handicaps[102].

Migration is closely linked to health, posing both health risks and opportunities for the individual migrant and for society as a whole[103]. As there are large numbers of migrants in different parts of the world, there is an effect on the health status. This could be that they affect the situation of health, or they are affected by the atmosphere of the foreign country. Migration brings with it long-term and often lifelong effects on migrants and the following generations.

Research on the health situation of migrants is lacking. In general, the migrant population is less informed about the existing health services and programs. Moreover, many barriers exist for seeking health care, including fear and language barriers.

Research shows that migrants are seen to be vulnerable to health problems. They often suffer from communicable diseases such as Tuberculosis or hepatitis, as well as respiratory diseases associated with poor nutrition, and cold overcrowded living conditions, inadequate sanitation and water supply, compounded by limited access to health care[104].

Immigrants from different origins can have specific patterns of disease and health needs because of genetic and behavioral factors and exposure to different environments in their countries of origin. Access to health care that can meet such specific needs or that is culturally and linguistically acceptable can also be difficult. Moreover, immigrants can be at a higher risk of living in relative poverty and being marginalized in their host countries, which can exacerbate their diseases[105].

Results from the report of health of non-Germans in North Rhine Westphalia showed that there are definite and clear differences between migrants and Germans concerning health indicators. For example, migrants in Germany are 5.2 times more likely to be diagnosed with tuberculosis than the non-migrants[106], which is similar case in other countries. Social exclusion and language barriers, as well as cultural attitudes to seeking healthcare, often render the biomedical risks even greater[107]. Information about AIDS is very little but among the 3,952 cases diagnosed in the North Rhine Westphalia, there are 12.6% who did not have German nationalities, and in Germany in general, the number of AIDS cases among migrants has risen in recent years and represents approximately 14% of all reported cases, who mainly come from Africa, North America, Asia and Latin America. Migrants from Turkey and Eastern Europe have been minimally affected[108].

About 50,000 Hepatitis B cases are estimated each year in Germany. A recent study found 503,040 Hepatitis B carriers of which 42% had a migratory background. The risk of being chronically infected with HBsAg was 4.3 times higher for foreign citizens compared to the German population[109].

The number of industrial accidents and injuries is higher among migrant workers than among citizens, especially those who work in construction work. Over 30% of all

accidents resulting in permanent disabilities involve non-nationals. And moreover, non-German children from 5 to 9 years old have more traffic and other accidents than German children[110]. Traffic accidents are highest among Turkish migrants (8.8/1000 inhabitants) followed by former Yugoslavians (8.2%/1000 inhabitants)[111].

Oral health is worse among children of migrants as well as they have more tooth decay than their German peers. Migrant families are less likely to use fluoride for example in mouth wash, and are less likely to obtain prophylactic care and counseling than non-migrant families: Only around half the migrant children have a dental check-up twice a year in comparison to the German children. Early detection screening is underutilized by the migrants in comparison to the German citizens. Also, the report in NRW showed that rates of immunization related to several diseases are lower among migrant children.

As for reproductive health, pregnant women from non-German nationalities tend to be younger than German women. For example, only 3.3% of German pregnant women are between 15 and 20 years old compared to 11% of pregnant women from Middle East including Turkey. Moreover, seeking care during pregnancy was found to be later (in terms of months) among non-German pregnant women and with fewer number of visits[112]. Perinatal and neonatal mortality rates are higher in foreign born groups, especially Turkish immigrants, than in the population as a whole. The rate of perinatal mortality for babies born to German mothers is approximately 5.2% and among the non-nationals approximately 7% and the incidence of congenital abnormalities and maternal mortality is also higher among immigrants[113].

One area of frequent neglect in response of migrants' health needs is that of reproductive rights[114]. Moreover, due to their vulnerable situation and to cultural obstacles in host countries, migrants appear to be more exposed than the rest of the population to other types of health problems, such as reproductive, occupational and mental health problems.

3.5.5 Psychosocial and psychiatric health

Psychosocial and physical health problems among migrants are closely related. During early contact and "integration", migrants appear to be more likely to develop psychosomatic problems than nationals. Stress-related symptoms such as peptic ulcers,

frequent severe headaches, anxiety attacks, dermatitis, and sleeping disorders have been frequently reported in European countries[115],[116]. Moreover, hypochondria, paranoia, disability and impairment of work performance have been reported[117].

The complex adaptation of migrants to the new social and cultural changes is connected to psychic load. And the individual dealing with those psychosocial stressors is determined through the psychosocial context and social environment in which migrants live[118].

Data obtained from psychiatric hospitals indicate that admission rates for mental health problems among migrants tend to be much higher than that for non-migrants. Men are also more likely to be admitted than women[119]. For example, an estimated 13% of immigrants seen for depressive disorders develop problems during their initial 12 months away from home. Another 25% tend to have problems within the following 2 to 5 years[120].

Psychiatric morbidity among children of immigrants reflects a wide range of familial, personal, and environmental circumstances, including lack of identity, confused cultural affiliation, parental job insecurity, regrets about leaving home, family disruption and poor future opportunities. Many adult migrants are forced to take low status and difficult jobs with work schedules that keep them away from home and their children[121]. A study in Germany showed that 57% of Turkish children under the age of 15 years were cared for by people other than their mothers. Almost 20% of pre-school students were looked after by siblings, and half of all children between the age of 7 and 14 took care of themselves[122].

3.5.6 Substance abuse

A study of psychological stress and coping among immigrant adolescents in Sweden[123] and in Germany[124] suggests that drug abuse is a consequence of difficult social integration. A WHO report in 1996 noted that the consumption of tranquillizers and anti-depressants by young immigrant people across Europe is growing[125].

3.6 Access of migrants to health care

Migrants tend to have limited access to health care in the host society due to factors such as language barriers, different concepts of health and disease, and racism among service providers and the general society.

There have been a number of reports documenting the reduced access to health care and the health consequences for migrants in many parts of the world[126]. But on the other hand, migrating to cities is still an option for social mobility and could actually mean a better quality of life and health[127].

Bollini and Siem (1995) argue that the poor health outcomes observed are linked to the low entitlements for migrants and ethnic groups in the receiving countries. They note:

"*Not only are exposed to poor working and living conditions, which are determinants of poor health, but they also have reduced access to health care for a number of political, administrative and cultural reasons which are not necessarily present in the native population and which vary in different societies and for different groups. Language, different concepts of health and disease, or the presences of racism, are examples of such selective barriers*"[128].

In general, the tendency for migrants to have less access to health care and resultant poorer health status is more marked for recent arrivals or for groups who are more socially disadvantaged in the host society[129]. In spite of the fact that migrant workers are selected for their good health and ability to work (the healthy migrant effect), there is evidence that later in life many end up with a substantial burden of disability (the exhausted migrant effect)[130].

3.7 Response of health care system to migrants

The prevailing negative attitude towards immigration and 'foreigners' influences the response of the health care system to their special needs[131].

Migration and health are characterized by a close and reciprocal correlation. The health of many migrants (in Germany almost every ninth citizen), work migrants, and refugees is affected by their difficult living situation before, during and after the migration. Living

in socially deprived circumstances, unemployment or hard manual work, xenophobia, cultural shock experiences, uprooting, and insecurity about residence status can further impact health status. Compared with the German population, physical diseases and psychosomatic disorders occur more often, the proportion of persons who retire at an early age is relatively high and certain diseases are more prevalent such as tuberculosis, hepatitis and AIDS[132].

Starting in the mid 1970s, there was a strong interest in providing access to medical care for migrant families, mainly women and children[133]. In this context, a number of questions have been raised in relation to the differences in disease experience and disease outcome as well as in relation to possible migration specific diseases:

- There are certain tropical and subtropical predominant diseases that are brought or imported by the migrants in the arrival land, such as malaria and tuberculosis.
- There are also other diseases that have higher prevalence in migrants than in Germans that should be taken into consideration in the treatment of migrants. Typical examples are infectious diseases and consequences, (such as helicobacter pylori infections, chronic hepatitis B, and liver carcinoma), genetic diseases with high prevalence in the original countries and chronic diseases.
- In reference to the relation between German doctors and foreign patients, there are special questions concerning the disease spectrums and inadequate structure and conditions to supply adequate health care. There is also a considerable debate concerning the counseling services that are highly needed.
- Other problems arise due to cultural and social differences (such as soul and psychosomatic disturbances)[134].

Decosas and Adrien (1997) note that there are problems with many epidemiological surveys because they often lead to a focus on migrants rather than on factors increasing vulnerability of diseases in mobile populations[135].

Despite the good health care system in Germany, a considerable number of treatments do not show the desired success: diagnoses are not exact, and therapies do not work. The reasons are: many migrants do not speak German very well, do not know the German health care system, and have, due to their culture, a different understanding of illness and a different terminology. Given that medical staff often has no background to understand

the situation of migrants, and interpreters are often not available, this makes the diagnosis more difficult[136].

The report on health conditions of migrants and refugees in the year 2000 recommended the following[137]:

- There should be an organization on the exchange of experience and information including migrants' and refugees' associations.
- Specific information programs for migrants covering their rights in the field of health care and education in prevention.
- Help associations of migrants to promote health education by financing the provision of educational documentation and through the training of staff recruited from migrant community.
- To encourage migrants to get involved in routine national and local health care and disease prevention programs.
- To examine more closely the problem of cultural obstacles in the way of access to health care including the question of translation/interpretation.
- To establish programs designed to train health care providers to be more sensitive to the needs and backgrounds of migrants.

The report by the Committee on Migration, Refugees and Demography points out the following[138]:

- From the specific perspective of health, few countries have seen fit to ensure migrants with the type of socially and culturally tailored services they need, and in many parts of Europe, there are migrants who are falling outside the scope of existing health and social service. There have also been few programs to train health care providers to the unique needs and contexts of migrants. Data indicate that because of economic and legal reasons, the housing and occupational environment of migrants places them at risk of communicable and non-communicable health problems.
- The growing nature of migration and the symbiosis created between migrants and host populations calls for much greater attention. More needs to be done, such as a systematically gather and share health and health care statistics concerning migrants, health screening and reason for it.

- Everywhere, there is the need to involve migrants in routine national and local health care and disease prevention programs.

The General Assembly of the Red Cross (GRC) report[139] suggests that in order to carry out the democratic claim for an equal participation in the German health care system of all persons living in Germany and to provide access to the health institutions, an extended variety of offers is necessary. The special needs of individual migrant groups, such as children, women and old persons, must be included in planning. The specific living situation, circumstances, life-story and migrant history must be taken into consideration.
Moreover, the GRC proposes more actions on intercultural trend, community orientation and integration as well as sensitization and education. In its projects, the GRC also concentrates on the care of the migrant old people in hospitals, preventive care, and in- and out-patient care.
Germany is moving toward this approach. There has been a project elaborated between the nursing staff of Nürnberg Bavarian Red Cross with the Social-Scientific Research Center of the Erlangen-Nürnberg University a project called "Improvement of the care of foreign patients" in the hospital. In this project, needs were identified by questioning the staff and patients. Then a topical seminar and in-house training were performed, multilingual communication documents were elaborated. This implies a community oriented attempt. There is another attempt of what is called "Multicultural old people's home" in Duisburg.
Upon the definition of the WHO for health and the definition of the concept of health promotion as "a process to provide all persons with a higher degree of self-determination with regard to their health, and thus enable them to improve their health"[140]; this means providing care respecting the dignity of the person. This requires a shift of the organization towards trans-cultural/culture sensitized treatment methods. It also means to provide a biography related care, taking into consideration the specific cultural backgrounds of migrants. As migrants gain intercultural knowledge as a result of their own reflected migration experiences, their education and further education in health care and old people's care should be supported. They are often better able to recognize the

needs of their compatriots than the locals and therefore they could function as mediators in multicultural teams[141].

In summary, the issue of migration in different countries and in Germany is a big burden on the health care system. The comprehension of the different factors surrounding migration process and migrants may lead to a better understanding of health concepts and health needs of migrant groups.

CHAPTER FOUR

4 STRESS, CULTURE, MENTAL HEALTH AND MIGRATION

This chapter presents an overview about stress, its models, associated factors, and its cultural aspects. Another section is about culture and health, migration and psychological stress, acculturation and women and psychological stress.

4.1 Stress

Stress is a broad area of study and knowledge development involving many disciplines, presumably in search of describing, understanding, and predicting stressors and their consequences for health and well-being.

It has become accepted that stress can influence physical and psychological health, and that too much stress can make a person ill[142]. Stress is also thought to be on the increase, and it has been suggested that stress arises at least partly from the increasing pressure people face in daily lives and becoming less able to keep apace with rapidly changing social attitudes, work practices and technological advances[143]. The problem occurs when the stressors exceed the human's coping ability or when they last too long.

Health care utilization research has repeatedly demonstrated that 30% to 60% of all physician office visits are for illness experiences that are non-disease based with stress as the common contributor[144],[145].

4.1.1 Definition of stress

Different definitions have been made, some of these are: ‘stress is the non-specific response of the body to any demand made upon it’[146]. Another definition by Lazarus and Folkman (1984)[147] is ‘stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being’. Stress in many studies is referred to as initiator or

stressor. Werner (1993)[148] has defined it as 'an external or internal event, condition, situation and or cause that has the potential to bring about, or actually activates significant physical or psychosocial reactions'. And stress is considered a pervasive factor in everyday life that critically affects development and functioning.

There are other ways to define and view stress. These are:

- Stimulus based definitions: these definitions identify stress as an aspect of the environment (a stimulus) which causes a strain reaction in the individual exposed to the stressful stimulus. Symonds (1947)[149] in this regard wrote that 'stress is that which happens to the man, not that which happens in him'. Life events are "stress" that require adaptation[150].
- Response-based definitions of stress: in these definitions, stress is defined as a non-specific response of the body to any demand made upon it. In these definitions, there is a focus upon the occurrence of the response as the actual stress itself. The response is viewed in terms of a physiological response pattern which leads to a disruption of normal homeostatic regulatory physiological functioning[151].
- Interaction definitions: this is a fusion of the stimulus and response models and labels stress as the whole process from encountering stressful stimuli in the environment, through to the process of response of the body with its accompanying physiological changes and the phenomenological experience of stress[152]. The term stress is "rubric" for a complex series of subjective phenomena, including cognitive appraisals (threat, harm, and challenge), stress emotions, coping responses, and reappraisals. Stress is experienced when the demands of a situation tax or exceed a person's resources and some type of harm or loss is anticipated[153].

4.1.2 Models of stress

Stress response theory is the main theory to explain stress, and there is a long history of its revolution in different sciences such as psychology and medicine. It has led to different models, thousands of studies and publications. Seyle is the father of this theory

and he gave it prominence and detail with his general adaptation syndrome (GAS) to describe in part the physiological responses to stressors[154].

Helman[155] (2000) pointed out the most common metaphors about stress among different cultures. These are:

1. Stress as a heavy weight. It is seen as a burden that presses down.
2. Stress as a wire. This is a description about nerves.
3. Stress as an internal chaos. Reflects internal uncontrollable disorder.
4. Stress as fragmentation. As an object that fragments by stress.
5. Stress as malfunctioning of a machine. The body is seen as a machine that can no longer function.
6. Stress as a depletion of vital liquid.
7. Stress as an inner explosion. In the absence of safety valve, the internal force explodes.
8. Stress as interpersonal force. One person causing the other to feel stressed.

There are other different models that described stress as well in the literature. One is the psychobiological model[156], the job strain model to which low social support has been added as a risk factor later[157], and the effect-reward model of work stress[158].

4.1.3 Signs of stress

Stress affects different people in different ways. It can cause violence or addictive behaviors, as well as psychological problems such as irritation, inability to concentrate, difficulty to make decisions or sleeping disorders[159]. It is also believed that severe and prolonged stress exposure impairs homeostatic mechanisms and in turn affecting hormonal levels in the body which could in turn affect different body systems including eating habits[160].

Behavioral manifestations of stress commonly reported are crying, smoking, excessive eating, drinking alcohol, fast talking and trembling[161]. It is also common for people to complain that stress negatively affect their functioning. It impairs concentration ability, problem-solving ability, decision-making ability and the ability to get work done[162],[163]. In addition, stress has been linked to symptomatic experiences such as headaches[164],[165],

musculoskeletal pain[166], gastrointestinal upset[167], hyperventilation[168], insomnia[169], and fatigue[170].

4.1.4 Coping with stress

Coping has been related to health and well-being in many studies[171], [172].There is also large literature linking social support to physical and mental health and it is knownthat emotional support, cognitive reinforcement and socializing are important factors in mental health.

The fundamental question of what coping is for is related to cultural values; it is to do with such matters as the desirability of control over distress as opposed to its acceptance and the significance attached to satisfaction, through distress relief of the individual as opposed to that of the family or the group. Thus coping practices or processes can not be considered in isolation of culture. Moreover, culture must play a large part in determining the way in which a particular event of emotional distress is conceptualized in the first place. Knowledge of the cultural background may be important in differentiating normal coping from symptoms[173].

Factors that affect coping with stress

There are different factors that play a part in dealing with stress or responding to a stressful stimulus. These could be personal characteristics, behaviors of the person, mediating factors such as coping ability, social factors and economic resources. The patients' abilities to cope, their spiritual resources and people resources, such as family and friends, modify reactivity. Conflict and abusive reactivity intensify response[174]. See figure 3.

Weinman (1981)[175] has described the importance of psychological responses or coping strategies of the individual confronted with stressors. These could range from an initial 'alarm and shock state' with feelings of anxiety or of being threatened, to a range of more extreme psychological reactions such as depression, withdrawal or suicide.

The range of possible stressors is extremely wide and these could be severe illness, divorce, marital conflict, financial difficulties, change in occupation, and migration …etc. However, individuals vary in how they cope with and adapt to these life changes. The

World Health Organization[176] points out that stress (and the disease that results from it) represents an unsuccessful attempt on the part of the body to deal with adverse factors in the environment. Seyle[177] also mentions that one cannot predict an individual's response to stress; this is called non-specificity.

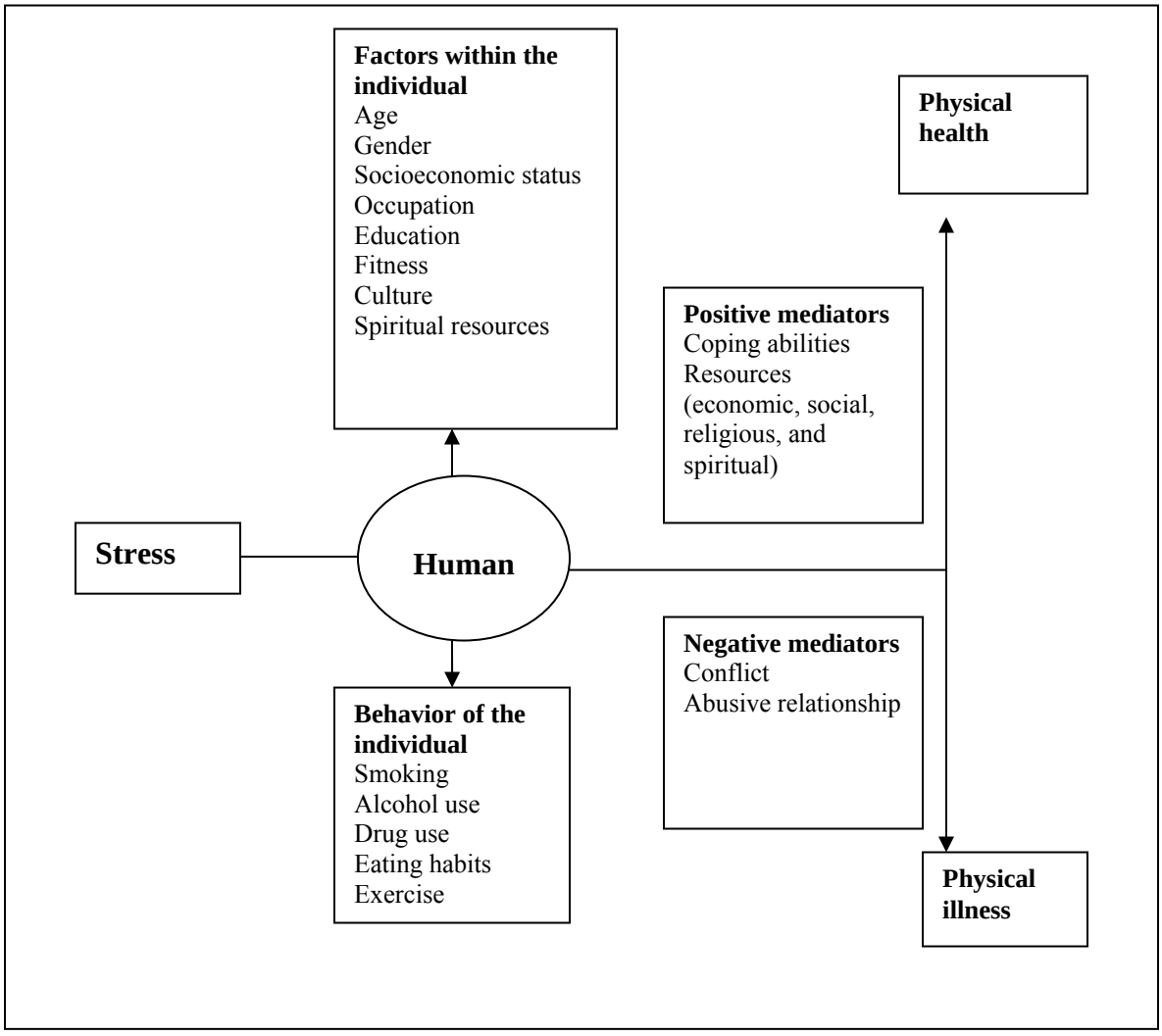


Figure 3. Overview of factors within and around the individual that could lead to health and illness upon the presence of positive or negative mediators
Data source: The journey embedded in psycho-physiological disorders. In: Mental health Nursing, 1999

Several factors that seem to emerge consistently as protective and buffering can reduce the chances that a major stressor will provoke a psychological pathology. Social support appears to be the most important of these factors. Good health is a factor for minimizing

stressfulness. Loss of social support and or lowered self-esteem increases vulnerability to depression if stress develops[178].

Helman[179] presents five factors that mediate stress response. These include:

1. *Individual characteristics*

   These characteristics could be physical (such as age, weight, nutrition, and previous health) and psychological. Weinman[180] points out how differences in personality affect response to stress, from phlegmatic types to those whose response is somatic.

2. *Physical environment*

   These could include stream heat, cold…etc.

3. *Economic status*

   Unemployment, deprivation and poverty are stressors as well as loss of income and financial insecurity.

4. *Cultural background*

   Guthrie and colleagues[181] found that women show more symptoms such as dizziness, headaches, nightmares and muscle twitches than men. This is related to culture perception of stress and the reaction to it. The culture values of a group may protect against stress by for example, strengthening social and family cohesion and mutual support, which enable the individual to cope better with life.

5. *Social support*

   Several authors have noted the importance of social support, at all stages of life, in protecting against stress. Kritiz and Moos[182] pointed out the relationship of social environment to stress. In their view, social support and a sense of group cohesion protect against stress, while a sense of personal responsibility for others increases stress.

Social support may act to reduce the chances of a major stressor provoking clinical depression, or other forms of psychopathology or illness[183]. The California Department of Mental Health found the following correlation between social ties and health:

- People who isolate themselves from others face two to four times the risk of premature death.

- Terminal cancer strikes isolated people more often than those with bonded relationships.
- Rates of mental hospitalization are five to ten times greater for separated, divorced and widowed persons than for married people.
- Pregnant women under stress and without supportive relationships have three times the number of complications than expectant mothers with intimate ties who are equally stressed.
- Women who can confide in a close friend are much less likely to become depressed.
- Diet and exercise are main ways to deal with stress as well.

Moreover, social support is one of the factors that affect coping adequately with stress. According to Steptoe (1991)[184], social support can consist of three major elements:

- *Effective intimacy and empathy:* the fact of knowing one or several people with whom to share emotional problem in an atmosphere of mutual understanding. For all individuals in the process of sudden migration or a stressful geographical displacement, this is a factor which will soon play its part and will lead to well-known behaviour in forming common ethnic groups or linguistic areas, as well as social groups produced by people who have been displaced for various reasons.
- *Material aid and services:* this is the most concrete case and often the most difficult to provide for. Some people need help regarding housing, food and emergency treatment, and when these are supplied, their resistance to marginalization occurs under less disastrous circumstances.
- *Information and advice:* they contribute to a more efficient investment of physical and mental energy; they help individuals get over the crucial hurdles and readjust so as to qualify for suitable jobs, to bear the brunt of cultural or linguistic shocks, or simply avoid confusion when faced with an unfamiliar situation.

Concerning the question on whether social support has an effect on the subject's well-being, studies on this subject show that these influences are direct when the support is assessed in terms of integration within social networks (the migrating role is said to be found more often when the support is assessed in terms of internal social resources). Moreover, the accumulation of stress with which the individual is unable to cope by

balancing his psychosomatic reaction disadvantages/negatively affects the individual going through an important event in life such as moving away from the family, usual environment, ethnic group or culture. Reaction to stress ultimately depends also on the event that causes the stress, and it appears that social and cultural factors have a great influence on the responses[185].

On the other hand, it has been emphasized in several studies that lack of social support is regarded as source of stress. Kessler and McLeod (1985)[186] found strong evidence for a buffering feeling of being emotionally supported and the perceived availability of support. They also found evidence for a marginal effect of support under condition of low stress.

Different types of support (emotional, appraisal, information and so on) are appreciated for different stressful events and at varying stages of a crisis[187].

Research has shown that a sense of community, or experiencing a feeling of belongingness, has real implication for health. A considerable amount of psychological research conducted over the past thirty years has illustrated how people need people, not just for the sake of their company, but also for the sake of one's own health[188].

There are also studies which illuminate how social support influences health including physical health[189],[190]. In general, high levels of social support are associated with less stress, increased disease resistance, better adherence to treatment, easier labor and childbirth, less severe bereavement reactions and even reduced death rates.

4.1.5 Cultural aspects of stress

Stress has become one of the most pervasive metaphors for personal and collective suffering in the late twentieth century. In Selye's model in (1936)[191], stress represents the generalized response of the organism to environmental demands. The actual environmental influence whether physical, psychological or socio-cultural that produces stress is called a stressor. Style has also described the sequence of events whereby an organism responds to a stressor as the General Adaptation Syndrome (GAS). This usually has three stages:

- The alarm reaction, whereby the organism becomes aware of a specific noxious stimulus.

- The stage of resistance or adaptation, in which the organism recovers to a functional level.
- The exhaustion stage, where the recovery processes are no longer enough to cope.

4.2 Culture and health

In studying the relationship of culture to mental health, a wide variety of correlations between psychopathology and recent stressful life events have been reported.
Researchers and practitioners both in medical and mental health fields realize that knowledge of gender and culture is important in evaluating health risks and developing disease prevention and treatment programs for diverse groups of people.

4.2.1 Definition of culture

The term culture has been so widely used that its precise meaning will vary from one situation to another.
Taylor[192] defined culture as "the complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society". So, culture is a medium of communication but not only in the reference to verbal and nonverbal language, but also to the way in which a person experiences the world in general, and the way in which other people experience and respond to that person.
Allen (1992)[193] distinguishes between seven different ways in which the word 'culture' can be used. These are generic (referring to the whole range of learned as opposed to instinctive behavior; expressive (essentially artistic expression); hierarchical (through which the superiority of one group over another is suggested in contrast to 'cultural relativism'); super-organic (analytically abstracting meaning concerning the context of everyday behavior rather than the minutia of the behavior); holistic (recognizing the interconnectedness of different aspects of life such as economics, religion and gender); pluralistic (highlighting the coexistence of multiple cultures in the same setting) and

hegemonic (emphasizing the relationship between cultural groups and power distribution).

Culture can also be described in terms of accumulation of knowledge among people constituting a social group, of 'conceptual structures' that determine the total reality of life within which people live and die, or of social institutions such as the family, the village and so on. And thus, cultural similarity may engender or determine a sense of belonging. In turn, culture is characterized by behavior and attitudes, determined by upbringing and choice, and perceived as changeable (assimilation and acculturation)[194].

4.2.2 Context of culture

Cultural background has an important influence on many aspects of people's lives, including their beliefs, behavior, emotions, language, religion, health and attitudes to illness. But there are also influences on health-related beliefs and behaviors other than culture. These include:

- Individual factors (such as age, gender, size, personality, experience, intelligence, physical and emotional state).
- Educational factors (both formal and informal).
- Socio-economic factors (such as social class, occupation or unemployment, economic status, social support from other people).
- Environmental factors (such as weather, pollution, housing, transportation, health facilities).

Cultures are the products of different ways of 'being' in the world. They describe the way in which groups of people experience, think, feel and behave. Culture has also a strong influence on the construction of a self-concept.

4.2.3 Dimensions of culture

There have been different studies on the dimensions of culture, such as Dollard (1935)[195] and Murdock (1980)[196]. Nevertheless, Hofstede's studies (1991) were the most influential of those to identify psychological dimensions; he identified five dimensions[197] which are:

1. Low power/distance-high power/ distance dimension:

This dimension is concerned with how inequality is dealt with by society. Some social or emotional distance may separate people of different rank to approach others in higher ranks.

2. Individualism-collectivism dimension:

   According to Hofstede, those who value personal time, freedom, challenge exemplify individualism. And those who value training, physical conditions and the use of skills reflect collectivism.

3. Low uncertainty avoidance-high uncertainty avoidance dimension:

   This dimension concerns 'the extent to which the members of a culture feel threatened by uncertain or unknown situations. This feeling is, among other things, expressed through nervous stress and in a need for predictability'.

   Draguns (1990)[198] suggests that individualist cultures favor insight-oriented therapy, and that themes of guilt, alienation and loneliness are emphasized in therapy. He also suggests that alleviation of suffering rather than self-understanding would be the target of therapy.

4. Masculinity-femininity dimension:

   According to Hofstede, in masculine cultures men are expected to be assertive, ambitious, competitive, striving for material success and respecting the big, the strong and the fast. In feminine cultures, women are expected to serve and to care for the non-material quality of life, for children and for the weak.

5. Short-term orientation-long-term orientation dimension:

   Hofstede refers this to short or long term orientation in life.

4.2.4 Analyzing health through culture

There are different ways in which people express their distress. Figure 4 summarizes four levels through which culture may influence suffering[199].

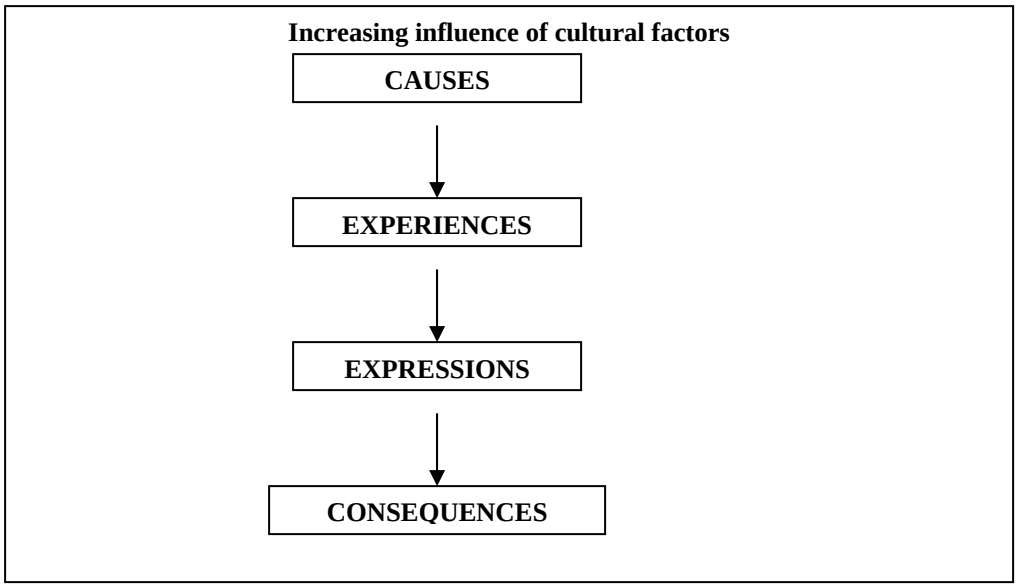


Figure 4. Levels of suffering affected by cultural factors
Data source: Culture and Health, 1997

The figure shows the first level which is the causal level. That is the agent responsible for bringing about the suffering. Such a cause could include infection and stress. The next level at which culture may influence suffering is at the level of experience. Thus the way in which we know that we are suffering may be influenced by our physical environment and the people around us. The level after is concerned with the expression of suffering. This could vary from the private level which is the aches and pains in the parts of the body or the public level which is how suffering is displayed. This could be withdrawal or telling others about all problems. The last level is the consequences of suffering. These could be various in different cultures and are influenced by the socio-cultural meaning of suffering.

4.2.5 Psychiatric thinking in the context of culture

In the Western culture today, the theme of 'illness' is consistently used in evaluating certain human problems. These are problems where individuals present with distress, are presented as disturbing other people (causing distress), or are designated as behaving in ways that society sees as deviant and irrational[200]. The basic contention that influences theorizing these instances is that personal disturbance seen as a problem in the mind is

associated with a biological change which is then conceived as a mental disorder or mental illness, see figure 5.

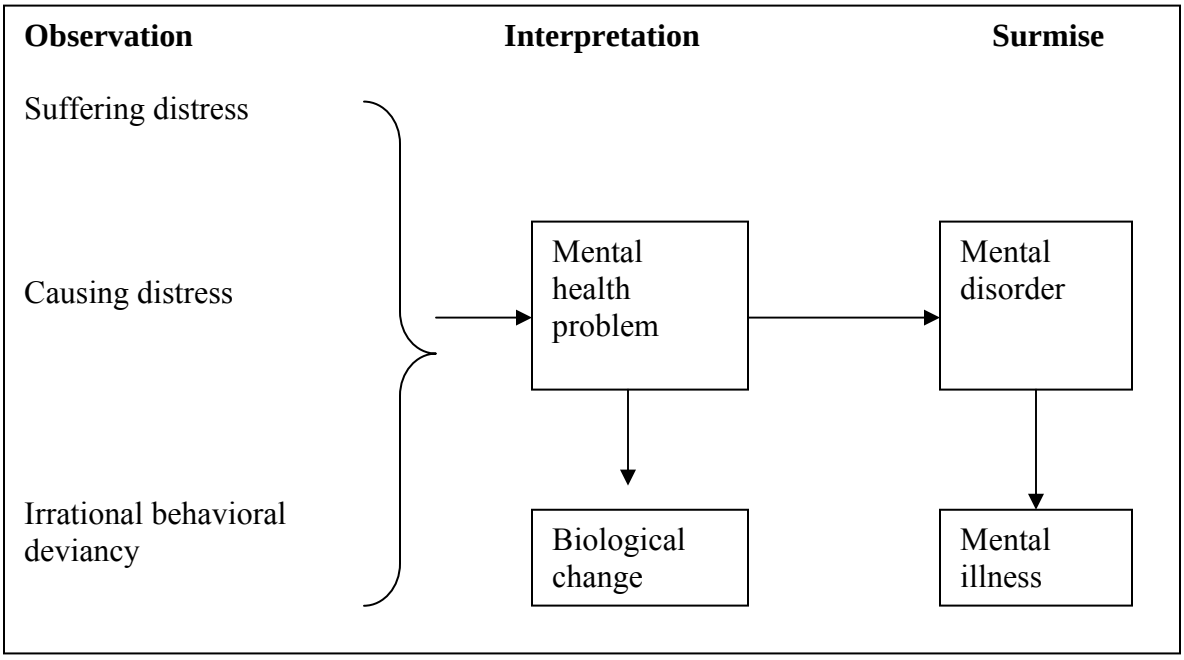


Figure 5. Types of distress and their effect on mental health and the presumption of resulting in a mental disorder, a biological change or mental illness
Data source: Mental Health in Multi-ethnic Society, A Multi-Disciplinary Handbook, 1995

4.3 Factors affecting physical, psychological and mental health

There have been numerous attempts to synthesize a comprehensive understanding of all things that affect health. These models integrate physiological, psychological and sociological influences on health. Hancock and Perkins (1985)[201] have developed a model in which one can understand the factors that could influence health. The model sees human ecology as an interaction of culture and environment, incorporating a holistic view of health and recognizing the biological sediment of organs, cells, molecules and atoms which forms the substrata of us all. This model reminds of the importance of the balance between different systems and subsystems. The community interfacing between the culture and family allows for differences in life style along with biological, spiritual and psychological experiences, see figure 6.

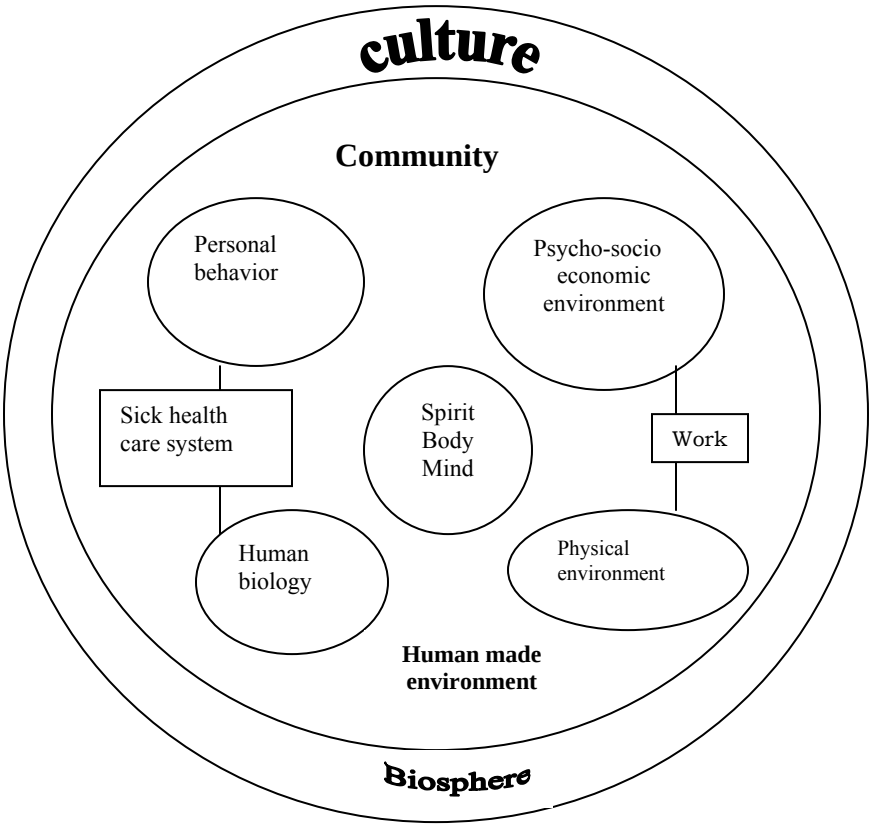


Figure 6. A model of the human ecosystem with different interactions of body, community, environment and culture
Data source: The Mandala of Health: a conceptual model and teaching tool. 1985

It is worth to mention as well that cultural beliefs, values, interpretations of physical conditions, and conflicts within the larger society may influence treatment patterns and prevent access to health services[202].

Psychosocial factors play an important role in health problems today. Frequently reported health problems include musculoskeletal disorders, chronic fatigue, headache, "sick building" and multiple chemical sensitivity syndromes, allergic reactions, psychosomatic reactions (somatization), phobias, immunity disorders, depression, anxiety, subjective health problems, sleeping difficulties and perceived threats[203].

Researchers generally agree that rapid social change creates cases of severe social stress[204],[205]. Mental illness is seen as the result of interaction between two sets of factors; first, there is the amount that someone is predisposed towards certain illness, and second, the occurrence of extra pressures. Thus, the socio-economic and environmental pressures facing people in lower social classes lead to an increase in incidence of mental health

problems. However, the type of illness experienced is determined by the specific vulnerability factors (biological, social, genetic, psychological) of different people. Mental health is then the product of social influence[206].

In Parkes (1971)[207] view of change, psychosocial transitions that most likely cause stresses are those that are lasting in their effects, take place over a short period of time and affect many of the assumptions that people make about their world. In his view, changes such as bereavement, loss of job, or migration will involve many aspects of an individual's life space, such as social relationships, occupational status, financial security, and living arrangements, and are more likely to provoke a stress response.

The social perspective considers social factors to be the major cause of mental illness, and stresses the importance of socio-economic status, ethnicity, family structure and participation in a paid work for mental health and illness[208].

Weiss (1974) proposed that some requirements for psychological well-being can only be met through social relationships. These relationships are maintained to provide attachment, social integration, reassurance of worth, reliable alliance and guidance, all of which shape the individual's perception of their own value[209].

4.4 Migration and psychological stress

Many of the stressors such as migration involve prolonged, major changes in the patterns of people's lives. These changes could be both mental and physical. From this point, stress represents an inadequate adaptation to change, an unsuccessful attempt on the part of the individual to cope with and adapt to the changed circumstances of their lives[210].

Although it was once believed that migration inevitably led to psychological and social problems, current views are that while migration may be a risk factor, outcomes range from very positive to very negative.

The challenge for policy-makers is to identify and master the factors in society that favor a positive adaptation[211].

The consequences of immigration and resettlement influence the psychological well-being of all immigrant populations[212]. Immigration was also found to have an impact on physical health[213].

Immigration disrupts every aspect of an individual's life, resulting in the need to restructure one's way of looking at the world and one's plans for living in it[214]. The relationship of stressful life events to the etiology, onset, course, and the outcome of various psychiatric conditions, such as schizophrenia, depression and anxiety, has been the focus of significant empirical research[215].

Literature has documented the psychosocial challenges and problems of resettlement, including communication problems[216],[217], differences in health beliefs and self-care practices[218],[219], and cultural barriers to health care[220]. Psychosocial stress through migration itself and through integration problems can happen among migrants[221].

4.4.1 Life changes linked to migration

Westermeyer (1989)[222] described different changes that are associated with migration. These are summarized in box 2.

Evidence also shows that mental health problems grow in direct relation to the disturbing of traditional bonds that hold families and communities together[223].

Attitudes/values/beliefs/mores
Recreational activities
Circadian rhythms
Communication
Delayed culture conflicts
Developmental/life cycle changes
Ecological changes
Laws/regulations/legal status
Loyalties
Religious practices
Returning home
Social network loss
Social roles
Vocational changes

Box 2. Different changes associated with migration
Data source: Mental Health for Refugees and other Migrants: Social and Preventive Approaches,1989

Miller (1975)[224] has used a stress model to analyze the psychiatric implications of geographical mobility in terms of four main stress points: antecedent events, separation; the process of moving; and the re-establishment, when the degree of stress depends on many factors such as the individual, his family and the host community. Miller concludes that the hypotheses to explain more mental illness among migrants are: social causation

(that migration is more stressful than non-migration) and social selection (that the mentally ill migrate in greater numbers than the non-mentally ill). A third possibility is that migrants may not actually have a higher prevalence of this disorder but may be more likely than the native-born to be hospitalized and diagnosed as such[225].

The inter-relationship between psychosocial and physical health problems among migrants is a close one. During early contact and "integration", migrants appear to be more likely to develop psychosomatic problems than nationals. Stress-related symptoms such as peptic ulcers, frequent severe headaches, anxiety attacks, dermatitis, and sleeping disorders have been frequently reported in European countries[226],[227]. Moreover, hypochondria, paranoia, disability and impairment of work performance have been reported[228].

Data obtained from psychiatric hospitals indicate that admission rates for mental health problems among migrants tend to be much higher than that for non-migrants[229], but as mentioned earlier, this could be related to misdiagnosis.

4.4.2 How does migration affect psychological status?

Migration generally requires major adaptation as people cross interpersonal, socio-economic, cultural and geographic boundaries. Even a carefully planned move implies a redefinition of identity and value systems, with frequent loss of support and disempowerment for foreigners in the new community. It may also represent an upheaval and a source of stress for the individual, the family or the community. Mobile populations can be more vulnerable to mental health problems than the native population, due to their status as migrants and their limited access to adequate services, especially if they can no longer refer to their traditional community support and remedies[230].

Machleidt (2000)[231] has described the psychological process of migration in four stages. The first stage is the first meeting with the receiving county and is characterized by curiosity, excitement and over idealization of the new country. Examples are the promises that guest workers give themselves concerning better life standards; or better education for the ones who come for degrees and that they will find better chances. The second stage is characterized by disillusionment and critical cultural adaptation. In the receiving country, migrants must adapt to the culture of the receiving country, so that

they have secure work and social existence. During this cognitive, psychic and practical adaptation process, a critical assessment of one's own cultural value takes place as well. In this phase of critical adaptation, there is vulnerability for stress diseases and psychosomatic disorders. The third phase is sorrow by migrants on loosing their cultural values. The last phase is forming a bicultural identity when migrants can keep their cultural values and also partly adopt values from the new culture. The length of this psychological migration process differs greatly and depends on the work, social and language integration[232].

Studies show that uprooting is always a psychologically distressing event. It involves the disruption of family life and interruption of traditional culture, values and "security". Migration requires leaving the familiarities in all life sectors. With migration, there are a lot of separation cases. In such a situation the support options are likely to be more limited than for nationals, and problems of loneliness, fear and poor self-esteem are often exacerbated[233].

Culture "conflict" in the early phase of contact with host societies is an important factor in psychosocial and mental health. Language difficulties are part of the cause and are a reason why many health problems, and especially mental health problems, tend to be misdiagnosed in migrant groups[234],[235].

Forced migration on the other hand means losing social, cultural, and economic connections with one's country or origin. It also includes the encounter with a different society, a different language, and the gradual adaptation to a new culture[236].

As noted by many authors, including Forrest[237] "forced or unplanned migration due to civil or natural disaster presents significant stress on population health status and nutrition, medical care and public health system, favoring emergence and dissemination of disease."

Although immigrants in Western Europe have the same entitlement to social services as the native population, concerns have been repeatedly raised on the actual utilization of these services. Moreover, the policies to meet the needs of the migrants have been inadequate due to several reasons. First, migrants are (or are perceived as) temporary residents, for whom health planning in not necessary. Migrants do not constitute a stable denominator, which is the basis of epidemiological surveys and public health planning in

host countries, as many go back, at some point, to their home countries. And in many countries, ethnicity is not recorded in census and health surveys. Second, immigrant communities usually represent a small proportion of the entire population, and they are likely to be disregarded by public health planning focused on majorities. Third, migrants often do not have political representation. Therefore, they are less effective than the native population in claiming resources for health care. And last, racism within societies also permeates health care institutions, affecting the way in which diseases of immigrant groups are diagnosed and treated[238].

Research has shown that one of the human conditions that have the greatest potential to produce stress is isolation. There is ample evidence that vulnerability to stress is intensified by the lack of close bonds and relationships. Social research confirms that people derive something from attachment that, in effect, serves to immunize them from stress. This "need for nearness" is manifested in strivings to feel wanted, needed and valued. It is met by establishing intimate social bonds and involves the feeling of belonging and being loved. Even the need for self-esteem is an expression of the necessity for nearness. When people feel good about themselves, it strengthens their confidence that they are worthy of belonging.

Marriage and family have been the main source for meeting nearness needs[239]. In turn, in the case of migration and being away from family, stress will increase. Statistics show that married people live longer than single people. Divorce also escalates the vulnerability to stress.

4.4.3 Causes and precipitants of mental disorder in migrants

The migratory process can be seen as three stages. The first stage, *pre-migration*, is when the individuals decide to migrate and plan the move. The second involves the process of *migration* itself and the physical transition from one place to another, involving all the necessary psychological and social steps. The third stage, *post-migration*, is when the individuals deal with the social and cultural frameworks of the new society, learn new roles and become interested in transforming their group in the new society (see figure 7). Primary migrants may be followed by others and once they are settled and have children,

the second generation is not a generation of migrants, but it will have some similar experiences in terms of cultural identity and stress[240] as the first generation.

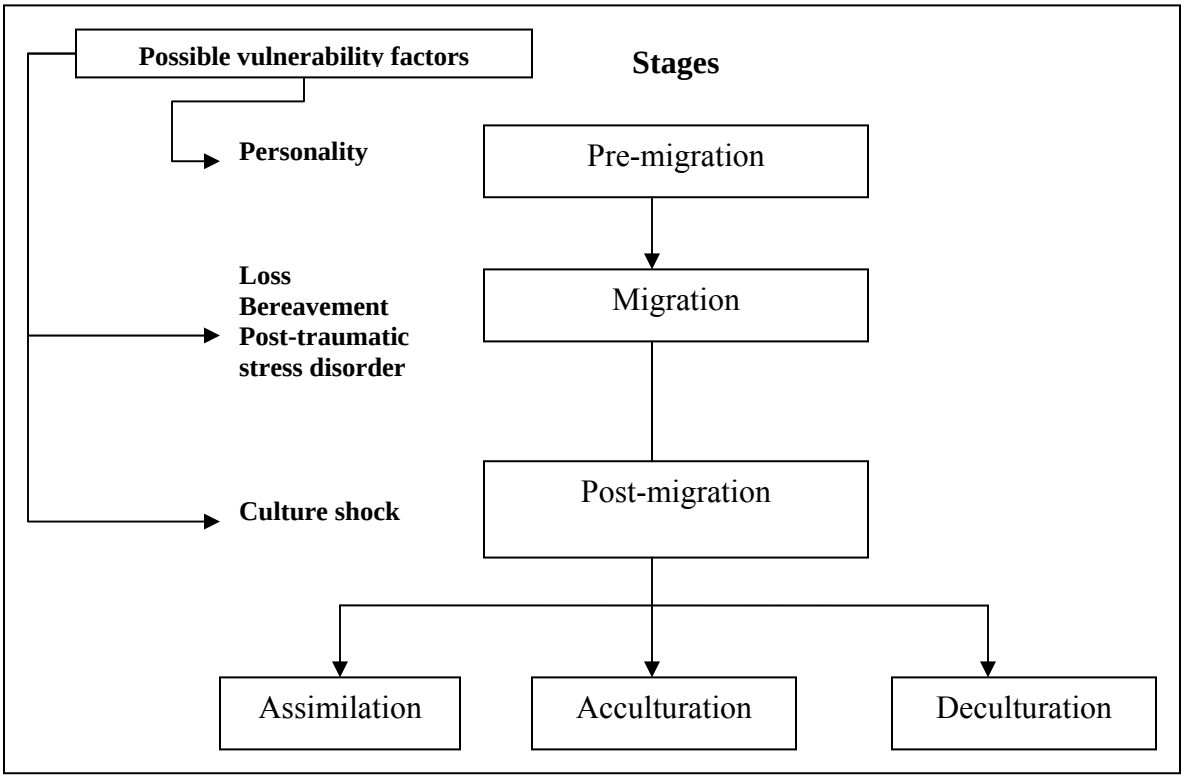


Figure 7. Three main stages of migration with vulnerability factors that could increase stress
Data source: Advances in Psychiatric Treatment, 2001

Phases of migration, interlinked with significant life events and chronic ongoing difficulties, as well as personal factors (e.g. self-concept, self-esteem) and relational factors (e.g. social support and cultural identity), must be considered separately and continually (see figure 8). In the first phase of migration the psychological distress will

be different from that experienced at a later stage.

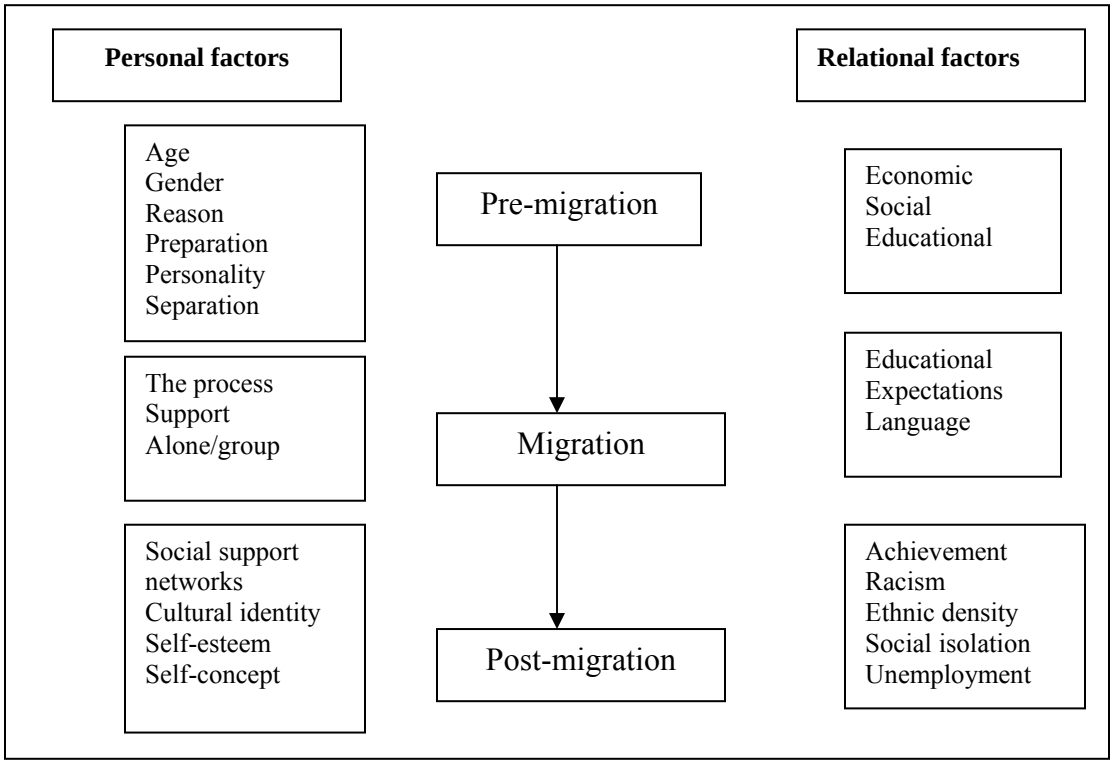


Figure 8. Personal and relational factors accompanying different migration stages that could be associated with psychological distress
Data source: Advances in Psychiatric Treatment, 2001

As was previously mentioned, studies show that migrants have a lower level of health than non-migrants. It was reported at the Migration and Health Conference in Brussels in 1990 that the health of migrants was generally worse than that of native populations, which was only partly explained by the fact that migrants often come from societies with a lower level of health care[241]. Migrants are instead more exposed to health hazards at the working site and in their daily life due to economic, social and cultural reasons. Based on the available studies, considering both the nature of the common diseases from which they suffer (e.g. psychological distress, disability from work-related accidents, higher infant mortality) and the lower or inadequate utilization of health services, it is apparent that there is much room for prevention and more effective health care[242].

The experience of migration is stressful. However, research has shown that various factors influence the degree to which this stress may result in significant psychological disorders. These are summarized in box 3 [243].

A. Pre-migration factors	***D. Family factors***
Self selection drift	Absence of family/partial family
Biased migration	Family expectations
Forced migration	Marital conflict
National policy	Intergenerational conflict
Traumatic events	
Lack of preparation	
B. Cultural factors	***E. Psychological factors***
Culture shock	Loss and grief
Future shock	Guilt and shame
Demodernization shock	Status inconsistency
Language and communication	Maladaptive traditionality
Acculturation stresses	Life change events
Minority status	Attitudes
	Expectations
	Homesickness
C. Social factors	***F. Biological factors***
Loss of social network	Acute travel effects
Social isolation	Organic brain damage
Role strain	Chronic illness
Marginality	Growing old
Unemployment	
Prejudice/bigotry	
Iatrogenic morbidity	

Box 3. Pre-migration, family, cultural, psychological, social, and biological factors that might cause mental disorders among migrants
Data source: Mental Health for Refugees and other Migrants: Social and Preventive Approaches, 1989

A. Pre-migration factors

As shown in Box 3, lack of preparation can occur among migrants. Desirable preparation may include language training, prior experience of separation from those left behind, and a plan of acculturation.

B. Cultural factors

These factors can cause unsettling, disorientating and disintegration. They can present challenges to social relationships and personal well-being. Failure to adapt to weather changes belongs to this group of factors.

C. Social factors

Migration usually involves the loss of an individual's social network and this influences the amount of social support available to a person which might enable them to cope more effectively with a stressful situation. For example, women from cultures which have traditionally put them in the role of homemaker may struggle to adapt to the role of factory worker. Unemployment could be a stressor as it could encompass many other negative factors such as poverty, lack of occupational role, lack of social network, lack of opportunities to maintain self –esteem. A study in the United States found that women with no paid employment experienced greater incidence of ill health[244].

D. Family factors

When migration occurs to all members of a family, it holds with it sharing the same past, the same migration and the same new environment. This can strengthen the family relationships. Migration that occurs only to some members of the family (solo migration) reduces this positive effect and may psychologically distance the family members from each other. Migration can add demands on migrants, especially if they are students or they are workers who have to send money back home. Different acculturation experiences may relate to age, with younger people finding it easier to adapt to the lifestyles of the new culture than do older people. Also many immigrants may leave behind a society where older age is associated with more respect and greater wisdom, and enter to a society where these things are seen 'spent'. This change in status can be very distressing and leading to conflict.

E. Psychological factors

A common reaction to those who migrate for a long time or permanently is the sense of loss and grieving for what has been left behind, including a particular self-identity. Homesickness can be an aspect of this. Some people continue to identify with the place they have migrated from.

E. Biological factors

Chronic illnesses may be difficult to cope with in an unfamiliar environment, especially where these are associated with a reduction in social support.

In exploring mental health issues in the context of the culture of the host society, several factors which may lead to a sense of socio-cultural disintegration should be considered.

These include the loss of cultural frames of reference, the degree and speed of cultural changes, and the stability and coherence of new culture. Studies have shown that people facing discrimination in education, jobs or others situations suffer from an excess of socio-emotional and psychological difficulties including mental disorders[245].
Inability to adjust and the severe acculturation process appear to produce a series of psychosomatic symptoms among a high proportion of the migrants as a reaction to stress and anxiety[246].

The implications of assessment for migrants have been discussed by Bhugra and Bhui (1997)[247]. Duration since migration, preparation prior to migration and post-migration assimilation, acceptance and deculturation can be the most destructive for the individual. Insidious ongoing racism, with both chronic difficulties and acute difficulties related to racial life events, can be pathogenic in producing various psychiatric conditions. They hypothesize that these factors work in social context: if ethnic density is sparse, with related paucity of support and other protective factors, the risk of illness will increase. These interactions can contribute not only to symptom information, but to persistence of symptoms (see Box 4).

The patient's explanatory model of illness
Carer/patient's attitude to illness
Migration status
Experience of migration
Migration phase
Adjustment
The host societies' attitudes
Cultural identity
Cultural conflict
Ethnic density
Achievements and expectations

Box 4. Factors to be taken in consideration when assessing mental health of migrants
Source: Advances in Psychiatric Treatment, 1997

4.5 Acculturation

This section provides a highlight on acculturation's definition and its types.

4.5.1 Definition of acculturation

A term that is linked to migration, culture and stress is acculturation. It describes the process whereby individuals encounter more than one culture and respond to the interplay between them in various ways. The way in which acculturation takes place and the stress experienced, can seriously affect health[248]. Acculturation has also been described as the process of transition which is brought about by the meeting of peoples from different cultures. Acculturation often results in changes in diets, lifestyles and deterioration of traditional social networks[249].

All illness or disorder occurs in a cultural context of some kind, and it is argued that cultural contexts influence the way in which suffering is caused, experienced, expressed and the consequences of such suffering.

4.5.2 Types of acculturation

A model was produced by Berry and Kim (1988)[250] in order to describe the process of acculturation. According to the model (see figure 9), one decides whether or not to keep his or her original cultural identity and characteristics and to maintain relationships with other groups.

Integration between the two cultures occurs when the decision is to identify with and exhibit the characteristics of both the original culture and the new host culture. Here the immigrant selects parts of both cultures and brings them together through their own behavior and beliefs.

A second type of acculturation occurs when the immigrant retains his or her original cultural identity and does not want to adopt the host country's culture. It is separation from the new culture.

A third type is that the immigrant wishes to take on the identity and characteristics of the new culture and disowns his or her new culture and this is called assimilation.

The fourth type of the model is marginalization. In this case there is little interest in identifying with or displaying the characteristics of either the original or the new culture.

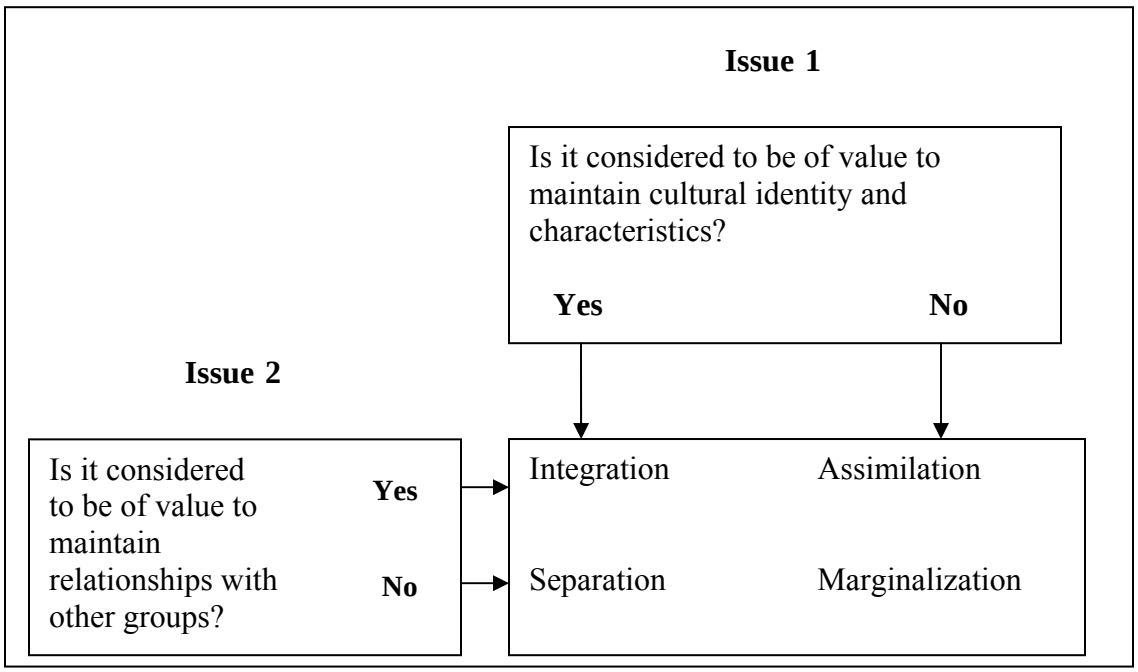


Figure 9. Different types of acculturation experience: integration, assimilation, separation or marginalization upon deciding whether not to keep original cultural identity and characteristics and to maintain relationship with other groups
Data source: Acculturation and mental health, 1988

Berry suggests that the four types of acculturation have implications for physical, psychological and social aspects of health. Individual's sense of uncertainty and confusion may result in identity confusion and associated symptoms of distress.

4.6 Women and psychological stress

The circumstances surrounding this research limited the sample to females, and it is well-known that women are more susceptible than men to have more stress and mental illness. Gender differences in the prevalence of psychiatric disorders have been known for several centuries. Women in most countries suffer greater morbidity and poorer health outcomes and have a higher prevalence of certain health problems than men including psychiatric disorders. Literature shows that women have higher prevalence of depression, deliberate self-harm, seasonal affective disorder, anxiety, panic attacks, social phobias and eating disorders than men. Depression for example, is twice as common in women as

in men[251]. Jenkins (1991) indicated that females and those of lower socio-economic status tend to experience more stress than other groups[252].

In general, women have less access to health care than men. Studies show disturbing results concerning women's access to health care and about health-influencing behaviors and attitudes that affect their current and future physical and mental health status. Women's social role also makes them more vulnerable to developing mental illness, especially depression and anxiety[253].

The individual's risk of encountering health problems is influenced by biological, political, economic, social, environmental and psychological adversities. In women, the biological basis of mental health problems is concentrated around menses, childbirth and the menopause. Studies of social trends and epidemiological issues have established that women beset by a lifetime of social and psychological disadvantage, coupled with years of childbearing and neglect, often end up by experiencing poverty, isolation and chronic psychological disability. Due to a preference of males over females in many parts of the world, female children receive less care and emotional support[254]. Poverty, discrimination and possible violence towards the female child have long-term debilitating and other adverse effects on the woman's physical health as well as mental health[255].

Emotions may be suppressed, distorted, or exaggerated for psychological, social or cultural reasons. In most societies for example, males are valued more highly than females, and this in turn affects health in its different dimensions. Moreover, the lack of autonomy and the limited nature of many women's social roles produce frustration, tension and is the source of psychological distress for many women[256].

Conflicting pressures are brought to bear on women caught between traditional domestic values and practices and those of the social environment they work and live in and thus confront women with difficult psychological barriers[257].

Walters (1993) has collected qualitative information on women's own understanding of their mental health problems. Women's explanations for mental health problems highlighted the social basis of mental health and the links between physical health and mental health. Women's explanations for poor mental health centered on three main themes: the heavy workload of women, issues of identity and social legacy. The heavy workload included the multiple demands faced by women: 'Trying to be everything

everyone wants you to be… not only the "double day of work" but other complications too'; for example caring for sick spouses, economic pressures etc.; also feeling overloaded: 'caring for others and receiving little in return. No time for oneself and lack of support'[258]. According to that information, issues of identity included cultural pressures of images of femininity and what it is to be a woman. Mental health problems were usually referred to in terms of the particular situations that women were trying to cope with and also of longer term struggles, such as the social legacy of being an immigrant.

Social roles of men and women may affect their health. Women usually hold major responsibility for the household tasks and for the care of children, spouse and elderly relatives. In turn, women face more demands from others, experience less privacy and time to themselves, and have a tendency to become physically run down and so, they are more vulnerable to mental health problems[259].

Moreover, migrant women sometimes suffer depression because of generation conflicts. Sons and daughters would like to do things that are "unaccepted" in the view of the parents, and this puts the parents under much stress[260].

In summary, different types of stresses faced during transition periods by migrant groups, and mainly by women, form major psychological factors that may lead to mental, psychological, and or physical problems. Moreover, the level of acculturation affects how much migrants can cope with the new changes they face during the different stages of migration. And that is why migrants in themselves are worthy of study by researchers as they encounter a number of health and behavioral problems as a consequence of moving into what are frequently alien environments.

CHAPTER FIVE

5 RESEARCH PURPOSE, AIMS AND OBJECTIVES

This chapter presents the purpose of the study, the hypotheses formulated in relation to the psychological stress among Arab migrant women, research questions, research aims and objectives as well as the definition of main terms used in the study.

5.1 Purpose of the study

This study had a main purpose of applying the COPC approach to study and assess a major problem among Arab migrant women, which is the sample of the study. Going through the first four steps of the approach as will be presented later in the methodology chapter, it was clear that the problem of psychological stress is a major issue in general, and among migrant women in specific. Moreover, meeting different people working in the field of psychology and psychiatric care provided evidence that stress is a main cause for different psychological and physical health problems. Therefore, this study investigates psychological stress and its associated factors among a sample of Arab migrant women.

There is no doubt that the circumstances accompanying migration from its start till settling down in the receiving country puts strain on migrating people. And due to the fact that Germany is a major receiving country for migrants, there is the need to involve those migrants in different studies. Given the fact that Arab migrants have not been the focus of any previous studies in Germany, this study will add more information to the literature about migrants in general and about Arab migrant women living in Germany in specific.

5.2 Study hypotheses

This study had the following hypotheses that were tested through different statistical tests all through the study period. These are:

- Stress scores of migrant women in this sample are higher than the normative sample scores.
- There is an association between socio-demographic variables including migratory status (being a migrant), health variables and psychological stress scores measured by SCL-90-R.
- A combination of different socio demographic, health or being a migrant variables can predict a high score for stress on the SCL-90-R instrument.
- There is an effect of intervention activities using both physical and cognitive approaches on reducing psychological stress scores of women.

5.3 Research questions

Research questions of the study were:

- Is COPC approach a practical method to investigate health problems of a migrant population in Germany?
- Through the application of the COPC, what is the problem of highest priority that Arab women face as migrants living in Germany and what factors are associated with this problem?
- How can this problem be reduced using an intervention program and does this program have an effect?

5.4 Research aims and objectives

The aim of this study was to assess using COPC as an approach to assess the Arab migrant women's community problems.

Through the application of this approach, the study had the following general objectives:

- To assess the health situation and problems that Arab migrant women face.
- To study the problem of highest priority in details with its related severity/scores, sources, and associated factors.
- To plan an intervention program to deal with this problem and to work on reducing it.
- To evaluate the effectiveness of the intervention activities.
- To make recommendations for future work on migrants on different levels.

Each step of the COPC approach in the study had its own specific aims. The following sections presents these with regard to the focus groups, key informant (expert) interviews, open group discussion, questionnaire, intervention and evaluation.

5.4.1 Focus groups' aim and objectives

The main aim of the focus groups was to get in-depth information about the health situation of Arab women as migrants living in Germany, concentrating on views, beliefs, opinions and attitudes.

The specific objectives of the focus group were:

- To explore how women perceive the health concept.
- To assess the main health problems they face.
- To identify the obstacles they face when they seek health care.
- To identify the source of information for health issues.
- To identify what preventive activities women perform to restore their health.

5.4.2 Key interviews' aim and objectives

The aim of the key informants' interviews was to get more in depth understanding of the health needs of the Arab migrant women community in the city of Cologne through collecting attitudes and opinions regarding health from the point of view of care providers. In addition, the fact that it is a requirement of the COPC approach to get detailed information before starting studying the main problem, key interviews were held. The objectives were:

- To assess health data registration on migrants.
- To identify main health problems observed among Arab migrants in general and among women in specific.

- To assess the level of compliance of Arab migrant women with treatment.
- To assess health education and health information.
- To assess obstacles observed for seeking help.
- To assess how women express their stress when they seek health.

5.4.3 Open group discussion's aim and objective

The aim of this part was to prioritize the list of problems that was gathered through the focus groups and the key informant interviews.

The main objective was to identify the health problem to be worked on throughout the research period with the participation of the community.

5.4.4 Questionnaire's aim and objectives

The general aim of the detailed assessment was to assess psychological stress among a sample of Arab migrant women who are 18 years and above in the city of Cologne in Germany.

The specific objectives were:

- To assess the level of the psychological stress among women by calculating the SCL-90-R nine item scores and three indices and comparing them to the normative sample scores.
- To assess the relationship/association of socio-demographic characteristics to psychological stress such as, age, education, marital status, length of stay in Germany, and type of work.
- To assess the current health status of women and their satisfaction with health care.
- To assess sources of stress for women.
- To explore factors associated with scores of psychological stress, such as being a migrant, feeling lonely, social support, visiting home country, and nutritional habits.
- To identify how women react to stressful situations (stress response).
- To assess what women do in their free time (time investment).

- To identify what intervention methods have been used to deal with psychological stress among Arab migrant women in Cologne.

5.4.5 Intervention's goal and objectives

The main goal of the COPC intervention step was to design a program that will assist to reduce psychological distress among Arab migrant women as measured by SCL-90-R scores.

The objectives were designed to be achieved over a 2 month intervention period. These were:

- To increase the awareness and use of stress management techniques among women.
- To increase the knowledge and use of physical exercise methods among women.
- To increase the awareness on health topics in general and psychological health in specific.
- To increase the number of women who will use counseling services at the center.

5.4.6 Evaluation's goals and objectives

This section had the aim to evaluate whether there was an effect of the intervention program on women's psychological stress scores measured by SCL-90-R. The objective of evaluation was to measure outcome, process and structure elements of the intervention program.

5.5 Definition of terms

This study applied the definitions of the following terms:

Health: WHO has defined it as more than the absence of disease; it embraces the concept of quality of life and a state of complete physical, mental and social well-being[261].

Psychological well-being: A measure of emotional health, is defined as the individual's subjective assessment of his or her inner emotional or feeling state[262],[263].

***SCL-90-R (Symptom Checklist 90 Revised)*:** An instrument containing 90 items that was designed by Derogatis in 1976 to measure stress.

Migrant: Migrants in this study are defined as persons who do not have the German nationality[264]. In Germany, persons who have just 3 month residence permit are considered in the official statistics as being migrants[265].

Stress: the non-specific response of the body to any demand made upon it[266].

***Stressor*:** Werner[267] has defined it as "an external or internal event, condition, situation and or cue that has the potential to bring about, or actually activates significant physical or psychosocial reactions".

In summary, this chapter provided information about the purpose of the study, the set hypotheses, research questions, aims and objectives, and the definition of main terms used in this study. As was presented, each section of the study had its own aims and objectives, but on the whole the purpose was all concentrated on the main content of assessing Arab migrant women.

CHAPTER SIX

6 THEORETICAL MODEL OF STRESS

Figure 10 shows a model that summarizes and describes how women experience stress. This figure is adapted from the model of Cooper 1986[268] and describes the sources of stress among migrant women as they appeared from the analysis of the questionnaires. The individual characteristics influence how one responds to stress. These responses were taken from women's reactions to the SCL-90-R questionnaire. The final section of this model shows possible outcomes of ineffective coping or when no help is sought; which may be psychological problems or mental illness in this case. However, migration can also bring positive changes in women's lives, such as being exposed to new life style, new technology or even new roles.

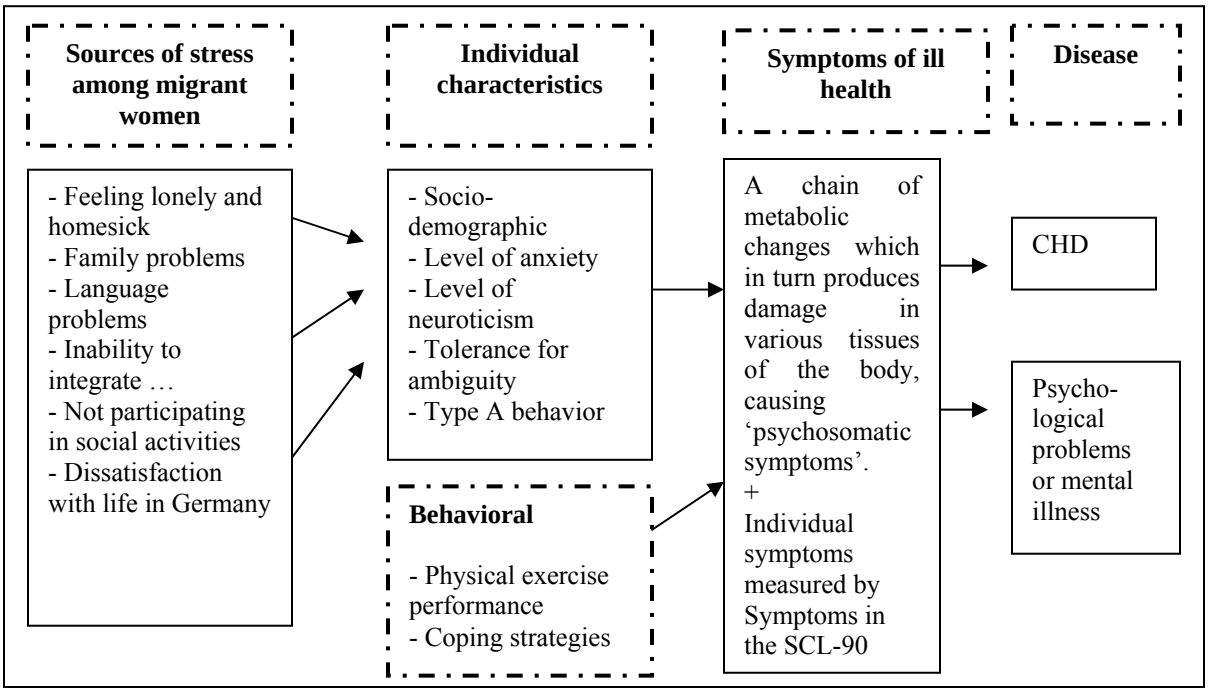


Figure 10. Sources of stress among migrant women; individual and behavioral factors associated with stress, and possible stress outcomes characterized either by physical illness, psychological or mental illness
Adapted from Cooper. Bulletin of the British Psychological Society, 1986

CHAPTER SEVEN

7 RESEARCH METHODS AND MATERIALS

This chapter presents the study design, study period, setting of the study, study population, sample and sampling methods, data collection methods and instruments, ethical issues related to the study, and data analysis strategies.

7.1 Study design

This study used a cross-sectional design, which is frequently used for studying a disease or a certain condition and its exposure in a descriptive manner. In this design a snapshot of the population at a certain point of time is taken, which can be of great value to public health administrators in assessing the health status and health care needs of a population[269]. As this study aimed to study for the first time a certain subgroup of the population in one city, the cross-sectional design was deemed to be appropriate. For the fifth step of the approach used in this study, which is COPC, there was the need to carry out an intervention program on a group of the sample and finally to evaluate the effect of this program in the last step of the approach.

7.2 Period of the study

This study was carried out over 26-month time (see table 5); the application of the six step approach of the COPC was carried out over that period of time. The study started in October 2003 and ended in November 2005. The fourth step of detailed assessment using the questionnaire to interview the largest number of the study sample took the longest part of the time.

Table 5. Timeline of the study according to COPC steps

Study component by COPC steps	Required time
Community definition, community characterization and problem prioritization	6 months
Detailed assessment covering focus groups, key informant interviews, open group discussion and interviews with women using questionnaires. Analysis and results	18 months
Intervention and evaluation	2 months
Total	26 months

7.3 Study setting

This part corresponds to the first step of the COPC approach, which is community definition. As the purpose of this study was to study Arab migrants using the COPC approach, there was the need to find a defined place (center or clinic) where they gather. The need to have this characteristic of having a defined space or area is for the aim of following this group in the six steps of the COPC approach. In this study, the community's definition is based on a certain geographical defined location which is the city of Cologne and on gender, which is the Arab migrant women at the Muslim Women's Educational Center Begegnungs-und Fortbildungszentrum muslimischer Frauen e.V.' (BFmF). This study involved women only as the majority of the activities of this center are offered for women (see Appendix A for written consent from the center to carry out the study).

The information about the center has been collected from the center itself and its staff. As was mentioned in the introduction, there were main features that recognized this center for the application of the COPC approach:

- It is a major foreigners' center for the town of Cologne since 1997, and migrants come to it from the different parts of the city for different purposes, such as language courses, training, treatment and counseling.
- It is a member of the Welfare Association since 1998.
- It is an approved adult education center by North Rhine Westphalia since 1998.
- It was awarded the Karl Kübel prize in 1999.
- It is the head of the youth assistance association since the year 2000.
- It has been presented an award for the exemplary commitment in the integration of migrants by the Federal President Johannes Rau in 2002.

The center is located in an area of Cologne called Ehrenfeld on Liebig Street 120b. The premises of the center are located in a municipal rented building and it occupies 800 square meters, divided into two floors.

The lounge, the office, classrooms and kitchen are located on the first floor in addition to five seminar rooms, a computer room and a café. The ground floor consists of separate space for child care and youth activities (see Appendix B for photos of main premises at the center).

The center has 20 female staff and 15 free lancers from different nationalities. Staff members come from 9 different countries and speak Arabic, German, English, Flemish, French, Kurdish, Persian and Turkish.

On a daily basis, around 180 women 20 years and older, 40-50 children up to the age of 6 years and around 60 girls between 10-20 years old come to the institution.

Women get familiar with the center through the announcements about it and its activities by written brochures and the regular six-month activity plan that are distributed in the city's public places, clinics, mosques and other centers; or through the verbal announcements in the center or in mosques by the center staff. Women who learn about the center are requested to pass the information on to other women, relatives, neighbors or interested people.

7.4 Study population

This study was carried out in the city of Cologne in Germany covering an Arab migrant population. The COPC approach required first collecting information about the city of Cologne and its population (this will be presented in the results section), team formulation and geographical retrofitting[270],[271]. This part represents the second step of the approach which is community characterization.

7.4.1 COPC team formulation

In order to start the COPC approach, there was the need to formulate a team that will be part of the whole approach application.

The first visit paid to the center was on 31.03.2004 in which a meeting was held with the director and the idea of the COPC was presented. Moreover, more information about the center and its activities was received and an orientation round was done in the center. I received a written consent form from the director of the center that the study can be carried out at the center.

The team has been formulated in the second visit to the center (16.04.2004) after providing a presentation about the COPC approach and the study. So staff members who were able to provide input and assist in follow up for the study were included in the COPC team. Table 6 describes the team in terms of education, title and years of experience at the center.

The team met every 3 to 4 weeks in order to discuss the process of the steps and also to receive updates on all the activities of the approach. This assured continuous communication and feedback with the team and helped to continue the COPC cycle.

Table 6. COPC team that was formed by their education degrees, titles and years of experience at the center

Education degree	**Title**	**Years of experience at the center**
Diploma in Education and Diploma in Foreigners' Education	Director of the center	Since it was established, 6 years
Diploma in Education	- Vice Director - Social counselor	4 years
Diploma in Education (Pedagogy) and psychology	Social counselor	3 years
Homeopathy	Homeopath	2 years
Diploma in Psychology	Psychologist	2 years
Diploma in Social Sciences	- Trainer - Counseling for women who apply for work on the method that they can use to apply	1 year
Gynecology	Gynecologist*	9 years
* She is not from the staff, but is highly connected with the health activities at the center.		

7.4.2 Geographical retrofitting

The aim of this technique was to explore the geographical areas that are served by the center. The information from the statistical office in the city of Cologne revealed that Arab migrants are highly concentrated in three areas (Kalk, Mülheim and the Innenstadt) out of the nine areas where Arabs live in the city. The method for doing this part was by first getting the map of the city of Cologne with the postal codes (PLZ)[272] and secondly, getting a sample of 122 women who have been users of the BFmF center in the last two years. This sample was selected by taking every tenth user in the past two years. In this step the users' addresses (postal codes) were placed on the map resulting in a geographic picture of the current practice (see Appendix C for the geographical retrofitting map). The map shows that out of the 122 sample for the geographic retrofitting, a majority of 88 came from the nine main areas where Arab migrants are concentrated (Ehrenfeld 23 women, Innenstadt 16, Mülheim 14, Chorweiler 10, Nippes 10, Lindenthal 10, Kalk 6, Rodenkirchen 5, and Porz 4), and the rest 34 came from other parts of the city. This showed that the center is located in an area where women come from the different parts of the city and covers different age groups, which made it a representative place for carrying out the study.

7.5 Study sample and sampling

As this study was carried out on several sections corresponding to the steps of the COPC approach, there was the need to have different sub-samples corresponding to the main steps. So, a multistage sampling procedure was used including members of focus groups, key informant interviewees, an open group discussion, and a main sample to study the problem, of which another sub-sample was used for the intervention and evaluation steps. Figure 11 clarifies the sampling procedure corresponding to the steps of the COPC approach.

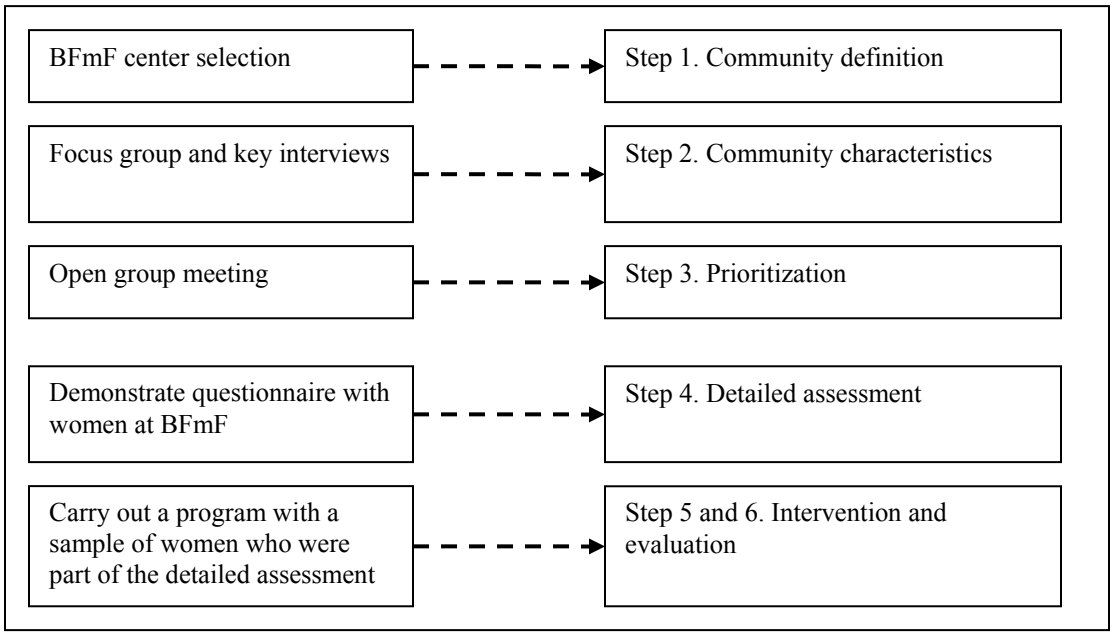


Figure 11. Samples of the different parts of the study in correspondence with the COPC six steps

7.5.1 Focus group sample and sampling

In order to collect data about health needs and problems of the study community, a qualitative method was used. Five focus groups of Arab migrant women were carried out (n=41).

This technique has been considered appropriate in the verbalization of different beliefs and values, and emphasizes the participants' perspectives. The group method facilitates the members' ability to express and clarify their beliefs, and may also encourage the participants to disclose behavior and attitudes, and opinions that might not consciously be revealed in one-on-one situations[273]. The technique is especially useful in understanding the target group's perspective and assisting health care providers to develop health care strategies that are sensitive and that reflect the participant priorities[274], which is the aim of this part of the study.

The announcement for the focus groups was done through the Women's Center. Participants were approached during their visits to the center for different courses, consultations or treatment. The COPC team recruited women by explaining the purpose of the focus groups. Another method to recruit women was through announcing the focus groups in the major mosque in the city and asking interested women to register at the center. Phone number and address of the center were provided in the mosque. Women

called and left their names and phone numbers. The total number of women willing to participate was 41, and this number was divided over five groups, each comprising of 8 participants except for one that had 9 participants. The day before each focus group meeting, participants were called to remind them about the session. At the women arrived, the researcher explained the study aim and got the verbal consent of every participant and completed a one-page demographic sheet in Arabic to be used for the description of the sample. If women could not read or write, the researcher read the items for them and put down their answers. The following box (see box 5) shows the items of the demographic questions.

- Age
- Marital status: (single, married, divorced, widowed)
- Number of children
- Level of education
- Profession/Job
- Country of origin
- Present nationality
- Number of years/months of living in Germany
- Level of German language knowledge (weak, good, excellent)
- Type of health insurance

Box 5. Demographic data items that were asked to participants in the focus groups

All the focus groups were held at the center using set appointments and they were held in Arabic language. Each session of the focus groups lasted between 45-60 minutes. All the sessions were audio-taped and then transcribed by hand. In order to assure confidentiality every participant was given a number and instructed to use that number to identify themselves every time they spoke in the group.

Sessions were held in the afternoons as it was a convenient time for women, and child care was provided in the facilities of the Women's Center. Participating women were offered refreshments by the center. As incentive to participate, women were offered to attend a free of charge health session at the center.

7.5.2 Key informant sample and sampling

After having the meeting with the COPC team, information was received on the major doctors in the city of Cologne that Arab women approach when they are ill. The team

identified a list of care providers being a well-known source of information on Arab migrants, and moreover we reviewed the list present in the health guide for migrants in Cologne[275]. In that list, there were 13 Arab doctors from different specialties: general medicine, surgeons, gynecology, psychiatry, radiology and urology. The idea of having also German doctors among the key informants was discussed, but the team was more in favor that most Arab population in general and women in specific prefer to go to Arab health providers due to language problems, and so the women would be more pooled in the Arab doctors' clinics. This was also clear from the focus group interviews. Five of the key informants were part of the staff at the women's center including the director, the homoeopath, two social counselors and one psychologist. The rest included six other key informants, so the total was 11 interviewees.

7.5.3 Open group discussion meeting sample

This part corresponds to the third step of the COPC approach which is the prioritization section. In this study, a qualitative method was used to choose the problem to be worked on for the rest of the steps of the approach. This depended on the views and the feedback of the clients/women, key informants and the COPC team. As different problems were mentioned to be of interest for the detailed part of the study, a meeting was called for in order to decide on which one to work on. So, an open group discussion meeting (n=43) was held at the center with the COPC team and few of the active members from the Arab women community in the city of Cologne on the 30th of September 2004. As will be shown later in the result section, the problem to be worked on was chosen to be high psychological stress.

7.5.4 Sample and sampling for the quantitative part

This part corresponds to the fourth step of the COPC approach which is detailed assessment. This step aimed to gather in-depth data about the psychological stress problem among Arab migrant women; its nature, extent and associated factors. But before coming to the sample itself, there was the need to collect information about Arab migrants living in the city of Cologne from primary sources such as the office of statistics, health office and secondary sources from literature.

So, for the purpose of this research, participant recruitment relied on taking all women who are members, attend courses, or seek treatment at the BFmF center. Those were 18 years and above, and came from Arab countries and who did not have the German nationality. Between December 2004 and May 2005, a sample of 116 Arab migrant women was recruited from the city of Cologne.

7.5.5 Sample and sampling for the intervention and evaluation steps

This part of the study tried to meet the need for having more studies on migrants in general and on migrants' psychological stress in specific. The participants in the study were recruited through the questionnaire interviews for the detailed assessment step. Women were asked at the end of the questionnaire if they would like to be part of an intervention program given their scores were high on the SCL-90-R and to provide their phone numbers for future contact. Willing women were contacted if their scores were higher than the normative sample scores on the SCL-90-R.

Fifty-six women provided their phone numbers and after contacting them by phone, only 46 showed interest to participate in the intervention program.

7.6 Data collection methods

This study used both qualitative as well as quantitative data collection methods in the various steps of the COPC approach. The total number of participants in the study in all the steps is 257. Figure 12 summarizes these methods with number of participants.

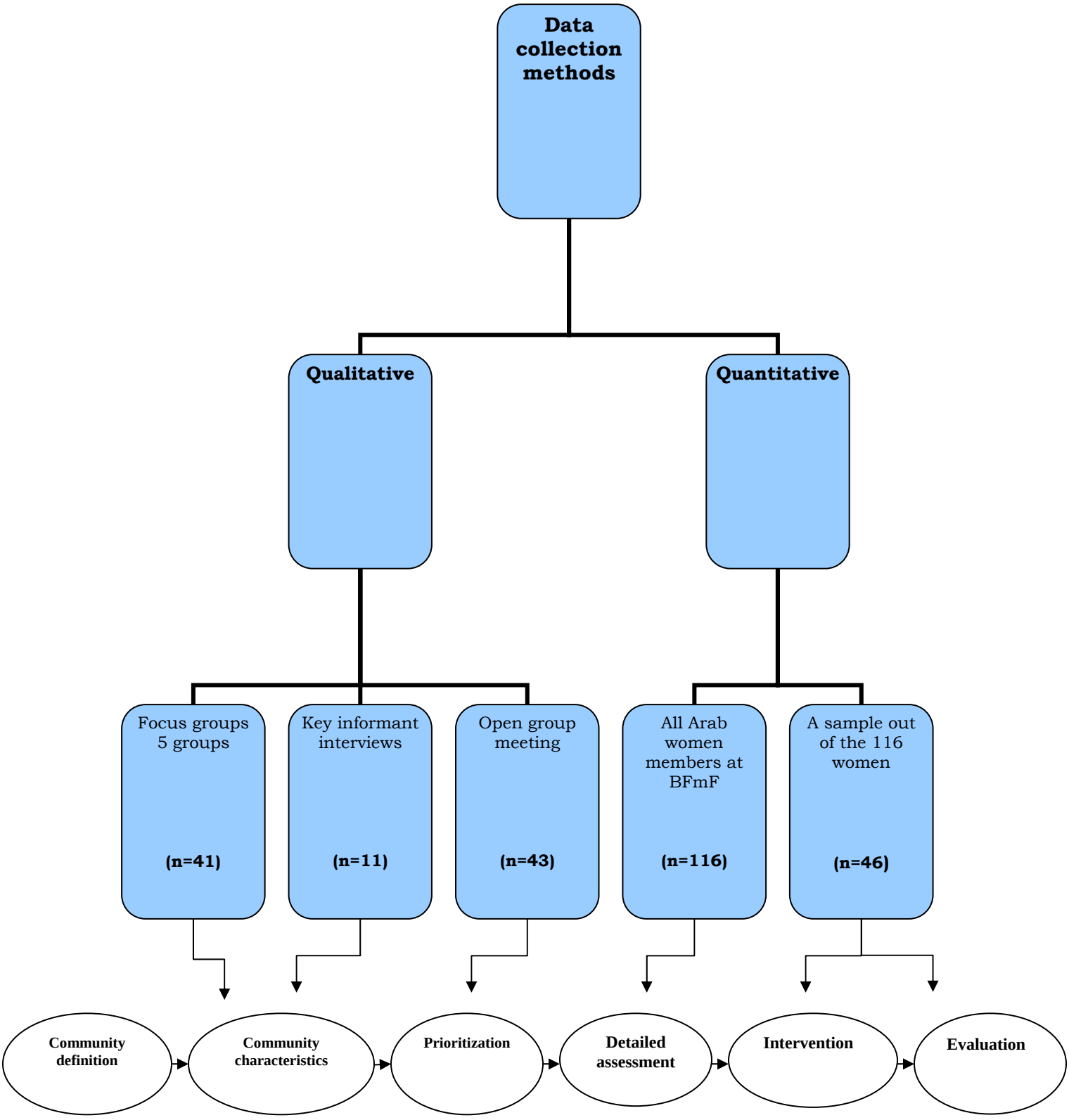


Figure 12. Qualitative and quantitative data collection methods with correspondence to each step of the COPC approach

7.7 Data collection instruments/measures

Different instruments were used for data collection. Open ended questions were used in the focus groups and key interviews and a close-ended questionnaire (including SCL-90-R) were used with women both in the detailed assessment and in the evaluation parts.

7.7.1 Focus groups data collection instrument

A focus group guide was prepared using open-ended questions. Each focus group was led by the researcher and was conducted in Arabic language and lasted around 45-60 minutes and followed certain questions and probes (see Appendix D). These open-ended questions and probes were developed on the basis of a review of literature and purposively to deeply explore views, attitudes, beliefs, practices and opinions about health and health provision and the problems women face in their lives as migrants in Germany.

7.7.2 Key interviews data collection instrument

Based on the literature review in COPC and on the results from the focus group interviews, few open-ended questions have been formulated in order to collect more information, observations, attitudes and services for migrants, such as exploring health data registration on migrants, health education materials, main observed health problems, and needs of Arab migrants; especially for women compared to other clients from other nationalities. See Appendix E for key questions for key questions used with key interviewees.

Following a verbal consent and approval and assuring confidentiality of data of the participants, data were collected through tape-recorded semi-structured interviews except for two that were performed over the phone and in this case they were recorded by hand-writing. Each informant was informed about the purpose of the study and each interview lasted between 20-30 minutes. Only in one case, the semi-structured questions were requested by fax before the informant agreed to participate in taking part in the interview. Scheduling the appointments for the interviews was done by phone. Interviews took place

at the work site of the participants, either at the center or at the clinics. The key informant interviews were held between the period of May 3rd and July 2004.

In addition to the guide that was designed, there was the need to refer to literature to get a wider view on the health status of migrants in the city of Cologne[276]. This includes basic data about the number of hospitals, doctors, morbidity, mortality, disabilities, and health insurance. This will be presented in the results section.

7.7.3 Open group meeting data collection instrument

This was done for the step of prioritization and included presenting the list of problems that was developed from the focus groups and key interviews, followed by a discussion with the people who attended the meeting. That discussion had the aim to rank the problems according to the highest priority using a qualitative method.

7.7.4 Quantitative part/questionnaire for detailed assessment and evaluation

A review of the literature was done in order to assess which instrument would be suitable to assess the psychological stress among women. This review showed that there are various instruments, but most of them covered only selected aspects of psychological problems, such as depression or anxiety only. However, according to Derogatis (2000)[277], the Symptom Checklist-90-Revised has received the most support for wide-ranging use as a screening instrument of global psychological stress. Results showed that this questionnaire is a valid and reliable instrument to assess psychological stress, and it was used in more than 120 studies in different parts of the world, such as in Argentina[278], Sweden[279],[280], Canada[281], Japan[282], the USA[283] and in other countries such as Palestine[284], Yemen[285], and Egypt[286].

In addition to the main SLC-90-R instrument questionnaire and based on the results from the focus group discussions, a demographic section, a section on health and satisfaction with health services, and a section on the psychological stressors were designed to be answered by the sample before responding to the SCL-90 items. The complete questionnaire is in Appendix F.

Description of the instrument SCL-90-R

The revised version of the SCL-90 is an assessment instrument for use with adults and adolescents through a frequency of symptom measure that was designed by Leonard Derogatis[287] in the United States in 1980s. The SCL-90-R was designed to assess psychological symptoms status in a broad spectrum of individuals ranging from non-patient "normal" respondents to in-patients suffering from psychiatric disorders. The instrument has been validated and has demonstrated high internal consistency[288],[289],[290]. Its reliability, validity and utility have been demonstrated in more than 1000 studies. Its sensitivity and clinical significance were demonstrated by Jacobson and Truax[291]. The SCL-90-R test is based on age-appropriate non-patient norm groups; adolescent norms are used for 13 to 17 years old and non-patient adult norms are used for subjects over the age of 17.

Description of the SCL-90-R symptom dimensions and global indices

The manual of Derogatis provides information about the SCL-90-R dimensions, administration and scoring[292]. It was reviewed before using the questionnaire in the research.

Each of the nine symptom dimensions comprises 6-13 items. The scores on each dimension are means of the scores of all items of the dimension. The mean scores of the nine dimensions can be expressed as a symptom profile.

The description of the original suggested dimensions is as follows:

- Somatization (SOM, 12 items): reflects distress arising from perceptions of bodily dysfunction. Complaints focus on cardiovascular, gastrointestinal, respiratory, and other symptoms with strong autonomic mediation.
- Obsessive-compulsive (O-C, 10 items): includes symptoms that are often identified with the stand clinical syndrome of the same name. This measure focuses on thoughts, impulses, and actions that are experienced as unremitting and irresistible and that are of an ego-alien or unwanted nature.

- Interpersonal sensitivity (INS, 9 items): focuses on feelings of inadequacy and inferiority, particularly in comparison with other people. Self-deprecation, self-doubt, and marked discomfort during interpersonal interactions are characteristic manifestations of this syndrome.
- Depression (DEP, 13 items): reflects a representative range of the manifestations of clinical depression. Symptoms of dysphoric mood and affect are represented as signs of withdrawal of life interest, lack of motivation, loss of vital energy. In addition, feelings of hopelessness, thoughts of suicide, and other cognitive and somatic correlates of depression are included.
- Anxiety (ANX, 10 items): nervousness, tension, and trembling are included in the definition as are panic attacks, feeling of terror, apprehension and dread.
- Hostility (HOS, 6 items): reflects thoughts, feelings or actions that are characteristics of the negative affect state of anger. There is a reflection of aggression, irritability, rage and resentment.
- Phobic anxiety (PHO, 7 items): defined as a persistent fear response, to a specific person, place, object or situation that is irrational and disproportionate to the stimulus and leads to avoidance or escape behavior.
- Paranoid ideation (PAR, 6 items): represents paranoid behavior as a disordered mode of thinking. The cardinal characteristics of projective thought, hostility, suspiciousness, grandiosity, centrality, fear of loss of autonomy, and delusions are viewed as primary reflections of this disorder.
- Psychoticism (PSY, 10 items): items indicative of a withdrawn, isolated, and schizoid lifestyle. This dimension provides for a graduated continuum from mild interpersonal alienation to dramatic psychosis.
- Additional items (7 items). These items contribute to the global scores of the questionnaire but are not scored collectively as a dimension. They primarily touch upon disturbances in appetite and sleep patterns.

Global indices of distress (GSI, PSDI, PST)

The scores on the nine symptom dimensions are expressed as a profile of symptoms. The global indices provide a means of communicating an individual's pathology with a single number. There are three suggested global indices for the SCL-90-R:

- The Global Severity Index (GSI), which is the average score of the 90 items of the questionnaire. It is computed by first summing the scores of the nine dimensions and the additional items, then dividing that by the total number of responses (i.e. 90, unless some questions were not answered; in this case these unanswered items are deducted from the 90).
- The Positive Symptoms Total (PST), which is the number of items scored above zero. It is derived by counting the number of items endorsed with a positive (non-zero) response.
- The Positive Symptom Distress Index (PSDI), which is the average score of the items scored above zero, is calculated by dividing the sum of all item values by the PST.

The GSI is suggested to be the best single indicator of the current level of the disorder [293], and the GSI has also been used as a psychiatric outcome measure.

Once the raw scores and the three global indices are calculated, they are compared to the norm-group which is adult non-patient. Due to the fact that there are no previously established normative sample scores for Arab patients/individuals, the normative sample scores of the author (Derogatis) were used in this study for comparison.

Administration of the SCL-90-R

The questionnaire requires a brief introduction by a nurse, a technician or clinical interviewer to ensure validity[294]. The introduction can be very short but should allow for the interviewee to ask questions.

Instructions

Instructions are simple and can be given in 1-2 minutes and can be like this:

"Below is a list of problems and complaints that people sometimes have. Read each one carefully and select one of the numbered descriptors that best describe how much discomfort that problem has caused to you during the past 7 days INCLUDING TODAY. Place that number in the open block to the right of the problem. Do not skip any items, and print your number clearly. If you change your mind, erase your first number completely."

Time set

The standard time set given with the SCL-90 is "7 days including today", but it is designed with a flexible time window so that evaluations over other specific periods of time can be made.

Administration time

The test can be completed in about 15-20 minutes. The questions should be answered in terms of symptoms or feelings 'over the last week, including today'. With additional items added, the questionnaire in this study took 25 to 30 minutes for completion.

Procedure for the SCL-90-R questionnaire application

This required getting the Arabic version of the SCL-90-R questionnaire, piloting it, checking its reliability and validity, preparing a setting for the questionnaire to be carried out, and to check the scoring method of the questionnaire.

Arabic version of SCL-90-R

As the sample for the study is Arabic-speaking women, there was the need to get the Arabic version of the SCL-90-R. This version was translated into Arabic by experts fluent in both Arabic and English[295]. The split-half reliability of the Arabic version of the SCL-90-R was computed on a sample of 30 volunteer subjects with no previous history of psychiatric problems. Most of the test retest coefficients range from 0.80 to 0.90. The reliability of the instrument was found to be high in a prior study in a group of Arab women ($r = .83$)[296].

The SCL-90-R was translated and validated for use with Arabic-speaking populations of males[297] and females[298]

Piloting/pretest

In order to confirm the feasibility of using the questionnaire in the field and its acceptability by the members of the community, it was piloted with a group of 20 Arab migrant women who were recruited either in the city of Bielefeld or in the city of Cologne. Women were asked for feedback on vague or unclear items that need to be

modified, deleted or added. The questionnaire was also timed and it took around 25 minutes. The pilot sample was not included in the main sample of the study.

After the piloting, one question on the estimated monthly income of the woman/family in the demographic section was removed. Pilot subjects stated that this question is sensitive and women will not answer it or will be hesitant to give the correct figure. In addition, the question on level of education was reworded based on the education system of the Arab countries as this was easier for women to report.

For checking the content validity, a psychologist at the Psychology department at Bielefeld University was consulted to ensure that the items cover the main domains of the study, and after the piloting, different meetings with the psychologist were held for ensuring the correct scoring procedure.

Reliability: Internal consistency coefficients

Cronbach's alpha has been assessed for the SLC-90 subscales and global indices across different populations as control groups[299], psychiatric inpatients[300] as well as cancer patients[301]. For example, coefficient alpha in a study with 209 symptomatic volunteers ranged from 0.77 to 0.90[302].

Stability coefficients (test-retest reliability) for the SCL-90-R have generally been adequate across a range of patient groups and test-retest intervals. A study with a test-retest interval of 1 week for 94 mixed psychiatric outpatients had a range of 0.78-0.90[303]; a second study with a 10-week interval between tests reported correlation coefficients ranging from 0.68 to 0.80[304].

In this study, the internal consistency reliability using Cronbach's alpha was computed on the total scores for the SCL and was 0.91. Alpha was also calculated for the 9 items separately without the indices and was 0.84, and the standardized item was 0.85. For GSI, PST, PSDI indices, Cronbach alpha was = 0.82, and the 9 items with GSI, alpha was 0.87.

Setting for interviewing

The BFmF center provided a special room to carry out the questionnaire interviews in order to assure privacy of interviewees.

Participant recruitment relied on networking through the BFmF center. Women who are members at the BFmF center were introduced to the study by the researcher during their visits to the center for different activities and were offered the opportunity to participate in the study. Women who provided a verbal consent to participate were informed about the purpose of the research, the questionnaire, and they were informed that their responses would be kept anonymous and confidential and they could discontinue answering the questionnaire at any time. Women who agreed to be part of the intervention step of the study were asked to provide a phone number so that they could be contacted in the fifth step.

Scoring method

The answers of women were recorded in the scoring sheets and the scores were calculated manually. For double checking the manual calculation, a random sample of 19 cases (around 16% of the main sample) was re-entered into the SPSS program and scores were calculated automatically. Results showed compatibility of answers.

7.7.5 Data collection and planning for intervention

The intervention step included the following tasks:

- Collecting data from the literature on studies concerning psychological health of migrants in general and Arab migrants specifically, either in the city of Cologne or in Germany in general.
- Reviewing literature to find out effective methods to deal with psychological stress.
- Planning what can be done for women in Cologne concerning psychological stress. For this part, physical and cognitive methods were planned to be used in the activities.

The activities to reach the goal and the objectives were:

- Conducting a training course on stress management techniques including physical exercise and relaxation measures by a specialist.
- Holding sessions for women with different health topics requested in the focus group sessions. These included 12 sessions: psychological health and stress,

healthy nutrition, cancer, breast self examination, hypertension, exercise and health, diabetes mellitus, menopause, back pain and its management, anemia, home accidents and first aid.

- Fundraising for purchasing exercise equipment to be used by women during opening hours of the center.
- Designing health education materials in a culturally adequate format in Arabic. These included materials on exercising, relaxation techniques and other health topics that were included in the health education sessions.
- Make the new designed printed materials in Arabic available at the center and at Arab doctors' clinics as doctors were mentioned to be the best source of information on health issues.
- Advertising the counseling hours for migrant women including availability of Arabic language at the center, in the clinics of Arab doctors and mosques.

Timeline for activities

Table 7 presents the time plan for the activities that were done as part of the intervention step.

Table 7. Time plan for activities that were carried out in the intervention step

Activity	2005						2006		
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Present preliminary results of the study									
Brainstorm objectives and activities for the intervention									
Contact trainer and prepare protocol of training									
Make contacts with women who provided their phone numbers in the detailed assessment step of questionnaire									
Fundraising for the purchase machines									
Prepare health education materials in Arabic									
Implement intervention courses (2courses same day, one in the morning and one in the afternoon over 8 weeks)									
Make Arabic materials available for women at center									
Make materials available in Arab doctors' clinics									
Announce the counseling hours of the BFmF center in the clinics of doctors and mosques									
Make the post test evaluation									
Keep monitoring, obersvation and follow up									

Resources, budget and sustainability

The center was responsible for the following tasks:

- Hiring a trainer for the stress management and physical activity course during the planned time.

- Making the pamphlets available at the center, sending them to the doctors' clinics and recording the number of distributed pamphlets.
- Fundraising for the purchase of exercise equipment materials and providing space for the equipment at the center.
- Announcing the counseling hours at the clinics of the Arab doctors, other centers and mosques.
- Providing space, stationary and required equipment for all the activities.

Procedure

The center arranged the contact for the trainer for the physical exercise and the stress management courses. The space available at the center was used to hold the courses.

After contacting women by phone and informing them about dates and times of the sessions, they were divided into three groups (each containing 15, 15, and 16 women respectively) so that it would be easier to work with them.

Women could use the baby-sitting service at the center during the time of the course and courses were carried out in times that were convenient for them.

The researcher prepared the Arabic materials and provided the sessions on the requested health topics during the courses. As an incentive for participation, women received a folder free of charge with all the materials covered in the courses.

A. Physical exercise, stress management and relaxation, and health education sessions

All the activities and protocols were discussed with the COPC team before they were implemented.

The aim of the physical activity intervention was to provide awareness and introduction to physical and relaxation exercises and their importance in daily life. The activities were carried out at times that were convenient for women. Women were asked to report if they were able to participate in the exercise session and to check with their general physician if doing physical activities would interfere with any health problem they had. The exercise program was designed and conducted by a specialist. Twelve training sessions

were conducted over 8 weeks with the three groups of women, and each session lasted for 90 minutes.

Every session consisted of four parts: introduction, warming up and physical exercise, relaxation exercise and finally a discussion of a health related topic from the ones that were requested in the focus group discussions and on which women needed information. The trainer provided the first three parts, and the researcher gave the last section on health education topics.

During the introduction at the beginning of the first session the term "stress" and its effects on physical and psychological health and health behavior were clarified. Further, the possibility of coping by physical activities was emphasized. Next, the participant started with warming up and keep-fit exercises. The relaxation exercise was designed as progressive muscle relaxation, according to Jacobson[305]. The fourth section was holding a discussion on a health topic. At the end of the session, the participants were asked to implement the relaxation exercise during daily stressful situations. The following 7 sessions started with an assessment of the past weeks and included implementation of the relaxation exercise and discussion of new health related topics. The fitness exercise ended with a breathing exercise and muscle stretching. The participants were urged to use the knowledge learned. The 9th and the 10th sessions consisted of assessment, a keep-fit exercise, and autogenous training[306] as well as more health education sessions. In the last two sessions, the different physical exercises and relaxation techniques were reviewed, including meditation and women received a folder with documents on all the taught stress management techniques and health sessions as an incentive.

During the sessions, the trainer focused on cognitive aspects. The activities included psycho-education consisting of health education, and enhancement of problem-solving skills. Explaining stress and its signs in the first session was part of that. Women were presented with specific coping techniques, such as focusing on problems and seeking social support when needed. Women were asked to make a list of stressors they face in their daily life. The second session started with a discussion of that list.

In each of the 12 sessions, a health topic was discussed with women using different methods of presentation; return demonstration and using visuals and demonstration materials.

A checklist was used to record how many women attended each session.

B. Health material design in Arabic

Several pamphlets were prepared in Arabic language based on literature[307] and in consultation with a health education specialist. These included pamphlets on:

- How to deal with stress
- 20 minute physical exercises
- Exercise as part of your life
- Meditation
- Relaxation methods
- Nutrition and stress
- Breast self examination
- Women and menopause

After they were designed, they were presented to the health staff at the center to check any needed modification. They were then distributed to a few Arabic women to obtain feedback on the level of language used and understandability. Later on, the materials were photocopied and made available at the center, and the COPC team was responsible for sending them to be available at doctors' clinics for distribution to patients. The team had to record and document the number of pamphlets distributed either in the center or in the doctors' clinics for future evaluation.

C. Fundraising plan for purchasing exercise equipment was designed by the financial team of the center. Time of their usage and a small fee were to be set and announced when the equipment was available at the center, as well as appointing a trainer/assistant.

D. Social and psychological counseling times at the centers were announced at the doctors' clinics, centers and mosques by the COPC team.

7.7.6 Data collection for evaluation

SCL-90-R questionnaire was used as a post-intervention test for women. The scores of women were compared as pre and post intervention.

7.8 Ethical considerations

As mentioned earlier, a written consent was received from the center approving the study. Verbal consent was obtained to assure the willingness of participants to be part of the study. Participation in all the steps of the study was voluntary and respondents were informed that they can drop out at any time. Full anonymity was also ensured during the different study activities. For example, in the focus group section, women were given numbers for use during the discussions to identify themselves instead of mentioning their names, and women who were completing questionnaires only provided ID numbers for identification.

7.9 Analysis strategies

Each phase of data collection required a specific analysis strategy. These are presented as follows in correspondence to the methodology used for data collection.

7.9.1 Analysis strategy for focus groups

The tape recorded focus groups and key interviews were transcribed and the demographic profile was described. The analysis was done in two stages:

- First, the themes that were central to the areas of discussion both within and across the focus group interviews were identified. Then individual comments were categorized according to these themes.
- The second stage involved summarizing the data within and across groups. The outcome data guided the development of few of the questionnaire sections that were used in the detailed assessment step

7.9.2 Analysis strategy for key informant interviews

Data from key informant interviews were analyzed manually to uncover the main views, opinions, main health problems observed, needs of the Arab migrants and services available for them. The interviews were transcribed verbatim as the interviews went on. That is, all what was heard on the tape was transcribed. In the case of the hand-written

interviews, they were re-read immediately after the interviews to check for any missing information or missing words. The original transcriptions were used for the analysis. This meant that the interview data were read several times both as wholes and then as segments to establish a general idea about the whole topic. The analysis resulted in a general description about the health situation of the Arab migrants in Cologne and then investigated the following themes: the proportion of Arab health care seekers among other nationalities, main observed health problems, compliance of Arab patients with treatment and medical check-ups, availability of health education materials or health care providing centers using Arabic language, best way to inform patients about health, and communication problems.

7.9.3 Analysis strategy for open group discussion meeting

The session and main discussion points were documented by audio tape and using flip charts. The documents were then transcribed and translated into English and double checked with the COPC team. Manual analysis was used.

7.9.4 Analysis strategy for the questionnaire

All data were analyzed using the Statistical Package for Social Sciences (SPSS version 10) program.

Exploratory data analysis was done after entering the data in order to examine and get to know the data that were entered. This was done by generating plots and then numbers from scale and ordinal data. First, data were checked for:

- Errors. This was done by:
    - Checking the questionnaires manually to see if there are inconsistencies, double coding or obvious errors. This was done before entering the data into the computer.
    - All questionnaires were checked against the data in the SPSS data editor.
    - Means and standard deviations were checked for looking reasonable.
    - The N column was checked to find any missing data.
    - Data were checked for outliers.
- Statistical assumptions. This was done by:

- Checking homogeneity of variances.
- Normality of data and skewness was also checked on part of the scale variables by comparing the mean, median and mode.
- Descriptive statistics for each variable was computed and examined for missing data, marked skewness and the presence of outliers.

The analysis used in this part of the study was conducted in two ways:

1. **Descriptive statistics:** This part presents findings from the demographic part, the health, and the psychological sections and the scores of the SCL-90-R questionnaire. This section was used to generate a profile of the total sample that completed the questionnaire. Demographic variables were studied including age, education, marital status, number of children, length of stay in Germany, and type of job or profession. Descriptive analysis was also performed on health status and satisfaction with health, as well as on the psychological status including if living in Germany as a migrant negatively affects the psychological well-being, major stressors, social support and its sources, reaction to stress, nutrition and stress, visiting home country and its effect, and activities women perform in their free time. The last section in this part was on the scores of SCL-90-R questionnaire. These were described by means, standard deviations, and frequencies.
2. **Inferential statistics:** This part was done by three methods:
    a. Differential: to assess how different the scores of the Arab women on the SCL-90-R are from the normative non-patient scores. T-tests and analysis of variance (ANOVA) were employed to examine the differences in women's psychological distress 3 indices scores compared to the normative sample's scores. The difference in the scores and various independent variables, such as level of education, marital status, type of work…etc. was calculated.
    b. Associational: to assess the correlation of several independent variables with the scores of SCL-90-R (psychological distress). Here, binary and multiple regression analysis were used. Pearson or Spearman correlation

coefficients were calculated depending on the type of the independent variable.

c. Complex statistics for prediction of SCL index stress score or being a case on SCL-90-R instrument combining different independent variables. This was performed by first conducting multiple linear regressions by keeping the three SCL indices as scale dependent variables, and entering several independent variables. And then by performing logistic regressions and odds ratio. This logistic regression step required recoding the dependent variable into a dichotomous variable and this was done by dividing women into two groups: women who were cases on SCL (if GSI median score is >0.77) or were not cases (if GSI median score is <0.77) and then entering several independent variables (nominal or dichotomous). It will be explained later that the mean score of GSI 0.31 was first used as the cut point to consider the woman either a case or not a case on SCL, but as many women were in the case category, this made it more difficult to identify predictors and that is why, the decision was made to take the median as a cut point and not the mean.
d. Comparison: performing paired samples t Test after the intervention program was applied in order to compare pre and post intervention SCL scores.

Figure 13 summarizes the analysis strategy used for the questionnaire.

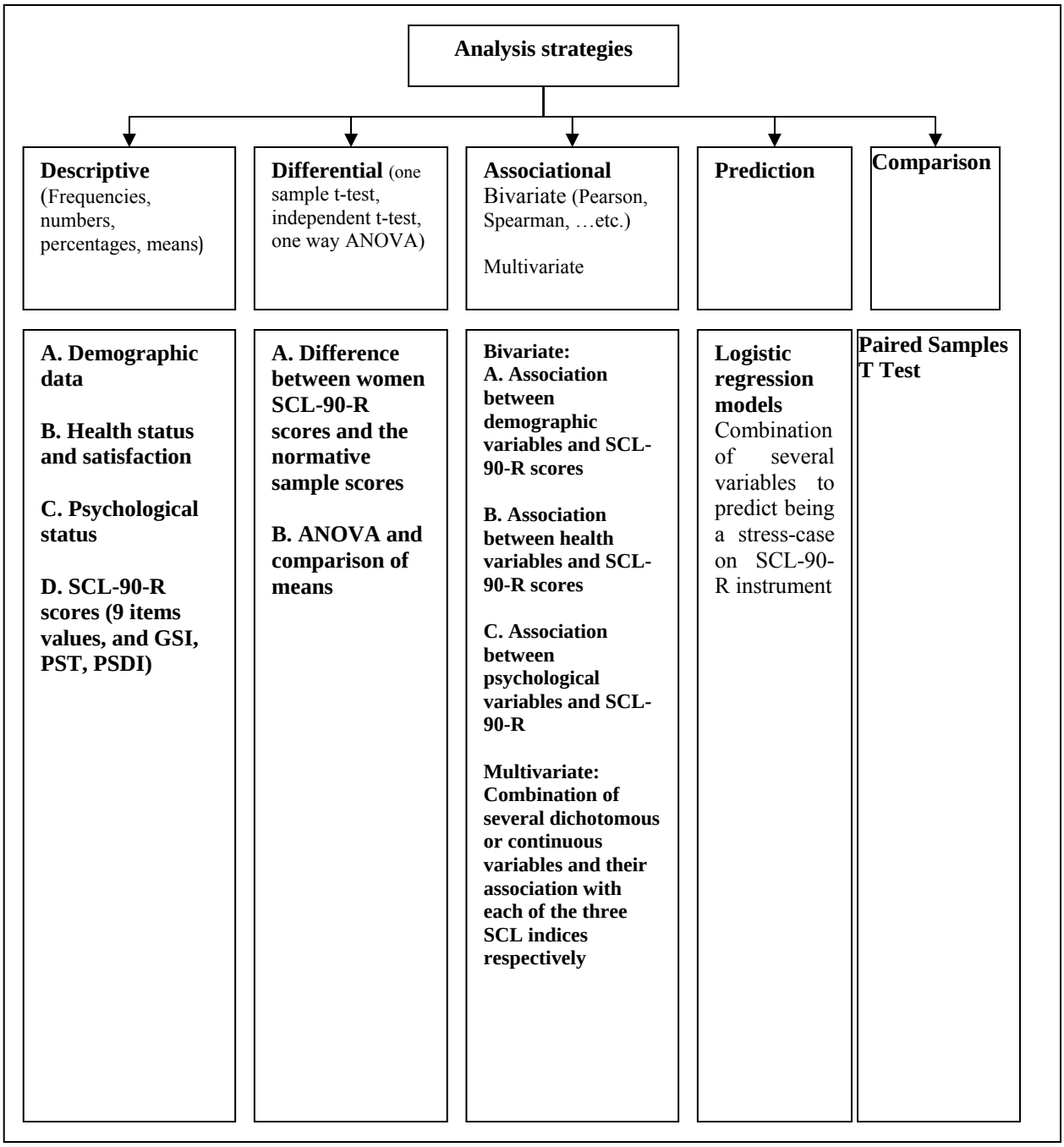


Figure 13. Analysis strategies for the questionnaire using descriptive, differential, associational, prediction and comparison statistics

7.9.5 Analysis strategy for intervention and evaluation steps

As mentioned previously, post-trial measures were used to measure the effect of the intervention program. Outcome measures were the self-reported scores on the nine items as reported by the SCL-90-R that was completed before and after the intervention by the 46 women who took part in the intervention program.

SPSS program was again used for the analysis of data and Paired Samples t Test was used in order to compare the change in the mean scores for women from pre- to post-intervention. This test is appropriate for use with repeated measures such as pre-scores and post-scores on the same sample (see figure 14). Moreover, the whole programs' structures, process and outcome were evaluated including all set activities.

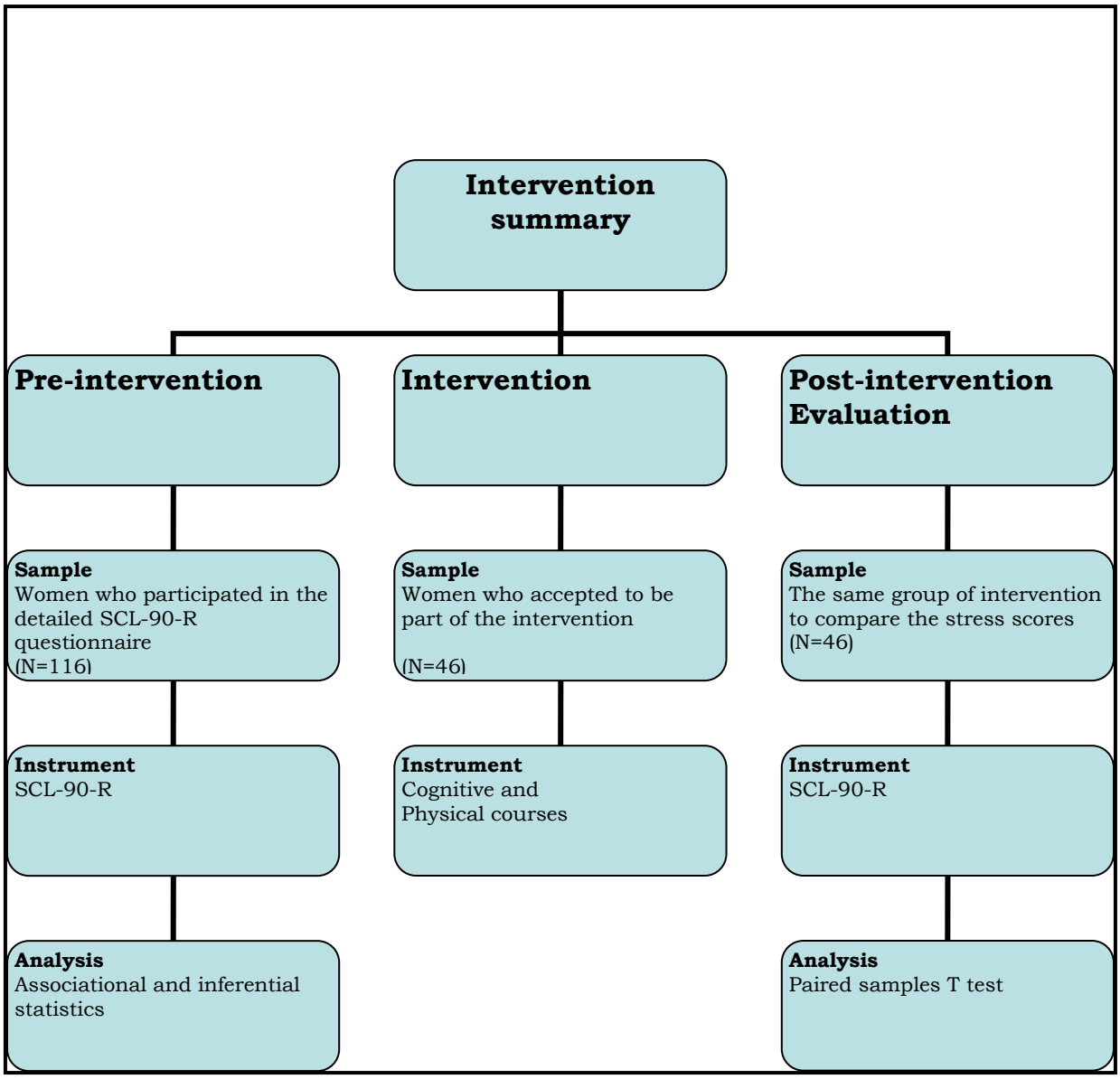


Figure 14. Intervention and evaluation methodology with sample sizes, instruments used and analysis strategies

In summary, this chapter showed that this study used both qualitative as well as quantitative methods for data collection and data analysis. The varied source of information either primary or secondary strengthened the basis of information and added concrete data that were used along the six steps of the study.

CHAPTER EIGHT

8 RESULTS

This chapter presents the results from the different steps of COPC; that is from secondary sources (literature review mainly for information about the city of Cologne and migrants) and primary sources including focus group discussions, key informant interviews, open group meeting discussion, the questionnaire, and intervention and evaluation results.

8.1 Cologne city profile

The main information about Cologne city was collected from the Office of Statistics and from the website about Cologne city[308]. This information covers population, socio-demographic data, geography, surface, religion and housing and buildings.

8.1.1 Population

Cologne is the fourth largest city in Germany and the largest city in the state of North Rhine-Westphalia. It is one of the most important German inland ports and considered the economic, cultural and historic capital of the Rhineland. It is the 16th largest city in the European Union (EU). The city of Cologne includes those with non-primary residences in its official figure, raising it to 1,020,603. A total of 20% of Cologne's population is non-German, 40% of these are Turkish[309]. The office of town planning showed that the number of inhabitants with migration background is 257,570 in the year 2002. Out of this number, there is 70.4% foreigner, 6.5% who have German citizenship, 11.5% ethnic German (Aussiedler), 11.7% who have double citizenship without counting ethnic Germans (Aussiedler).

Table 8 shows the details of the population including nationality, family status, population movement, born and death cases.

Table 8. Population in Cologne according to gender, nationality, family status, movement, and number of born and death cases with percentage changes in the years 2001 and 2002

Features	Number in 2002 31.12.2002	%	Number in 2001 31.12.2001	%	Change Number in comparison to 2001	Change in %
Total population	1 020 116	100	1 019049	100	1 067	0.1
Men	496 608	48.7	495 887	48.7	721	0.1
Women	523 508	51.3	523 162	51.3	346	0.1
Nationality						
German	838 900	82,2	836 593	82.1	2307	0.3
Foreigners	181 216	17.8	182 456	17.9	-1240	-0.7
Family status						
Single	448 886	44	446 220	43.8	2666	0.6
Married	436 403	42.8	439 336	43.1	-2933	-0.7
Divorced	70 180	6.9	68.862	6.8	1318	1.9
Widowed	64 647	6.3	64631	6.3	16	0
Population movement						
Move out	53 629		53 775		-146	-0.3
Move in	54 852		55024		-172	-0.3
Change of residence	84 111		83 922		189	0.2
Born	9615		9798		-183	-1.9
Death cases	9711		9576		135	1.4
Who have German citizenship	7232		8444		-1212	-14.4

Data source: Statistical year book of North Rhine Westphalia, 2003

8.1.2 Socioeconomic characteristics about the population of Cologne[310]

This part has information on the number of population, age structure, household structure, and foreign population in details. In certain sections, specific data could be found on Arab migrants, but in others data were only found about migrants in total as the office of statistics or health did not have specific separated data on each different group of migrants in the city. Some of the data were only found to cover the NRW as there were no data on the city of Cologne on its own.

Age structure

Comparing the age structure of German and foreign population, it is clear that German males and females live longer than the foreigners. Within the German population, women live longer (up to 99, men 92) while among the foreigner population, there seem to be nearly no difference between men and women (both up to 80 years old)[311].

Whereas in 1997 more than 60% of the migrants in the NRW were less than 35 years old, this age group comprised less than 40% of the German population. On the other hand,

less than 4% of the migrants were 65 years old or older, Germans of this age comprised nearly 20% of the German population[312].

The average age of the population of Cologne is 40.4 years in the year 2000 and it has increased by 0.2 year in the year 2002. The average age of women is 41.7 years and of men is 39.1 years[313]. Table 9 shows the age structure of population from different origins in the year 2002 in Cologne, and shows that the largest age group is between 25-45 years.

Table 9. Age structure of different population groups in Cologne

	Number of inhabitants	Persons from foreign origin									
Age structure (from…. till under …years)		Foreigners		With German citizenship		With double citizenship					
						EU nationals		Ethnic Germans (Aussiedler)		Others	
		Number	%	Number	%	Number	%	Number	%	Number	%
0-3	27.573	2967	10.8	53	0.2	950	3.4	1196	4.3	5006	18.2
3-6	27.653	6754	24.4	489	1.8	761	2.8	1244	4.5	2416	8.7
6-10	35.305	8433	23.9	961	2.7	928	2.6	1396	4.0	2265	6.4
10-14	37.073	8506	22.9	1137	3.1	1049	2.8	1740	4.7	1943	5.2
14-18	35.435	8179	23.1	950	2.7	402	1.1	1927	5.4	974	2.7
18-25	86.034	22.051	25.6	1888	2.2	667	0.8	3562	4.1	1666	1.9
25-35	178.835	44.155	24.7	4605	2.6	1068	0.6	3975	2.2	2890	1.6
35-45	179.904	29.662	16.5	3467	1.9	710	0.4	4868	2.7	2916	1.6
45-55	128.688	21.186	16.5	1754	1.4	197	0.2	4684	3.6	1652	1.3
55-60	56.101	10251	18.3	599	1.1	144	0.3	1094	2.0	401	0.7
60-65	65.834	9192	14.0	431	0.7	138	0.2	1220	1.9	248	0.4
65-75	92.684	7719	8.3	263	0.3	203	0.2	1831	2.0	266	0.3
75 and older	68.997	2161	3.1	60	0.1	102	0.1	924	1.3	74	0.1
Total	1.020.116	181.216	17.8	16 657	1.6	7319	0.7	29 661	2.9	22 717	2.2

Data source: Office for town planning and statistics, Cologne, 2003

Household

Table 10 shows the percentage of the different members in households in 2001 and in 2002[314]. It is clear that the one-person household forms the largest form of households.

Table 10. Household forms according to number of members in the years 2001 and 2002

Features	Number on 31.12.2002	%	Number on 31.12.2001	%	Change in %
Total households	**515 800**	**100**	**514 268**	**100**	0.3
1 person	246 226	47.7	245 142	47.7	0.4
2 persons	142 893	27.7	141 966	27.6	0.7
3 persons	65 341	12.7	65 699	12.8	-0.5
4 persons	42 321	8.2	42 507	8.3	-0.4
5 and more	18 980	3.7	18 954	3.6	0.1
Persons per household	1.94		1.94		

Data source: Office for town planning and statistics, Cologne, 2002

Education

Table 11 provides information on the type and number of schools, number of students including foreign students in Cologne. Foreign students form 26.3% of the total students. Cologne has one university, which has the biggest matriculations per year in Germany with 84 000. It has also 3 colleges with a total of 65 000 students[315]. In relation to the whole population of Cologne, the percentage of university students have raised from 7.3% in 1986 to 8.3% in 1997[316].

Table 11. Number of schools by type and number of students including foreign students in Cologne

Characteristics	Number	Percentage
Students in all kinds of schools in October 2002	102 563	100
Foreigners	26996	26.3
Total number of schools	280	
Primary school students	35 647	34.8
Of which foreigners	10 540	29.6
Number of schools	150	
Secondary general school (Hauptschule) students	12 267	12
Of which foreigners	5278	43
Number of schools	30	
Secondary intermediate (Realschule) students	13 199	12.9
Of which foreigners	3664	27.8
Number of schools	24	
Grammar (Gymnasium) students	26 316	25.7
Of which foreigners	3362	12.8
Number of schools	33	
Comprehensive (Gesamtschule) students	9542	9.3
Of which foreigners	2544	26.7
Number of schools	9	
Special schools students	5592	5.5
Of which foreigners	1608	28.8
Number of schools	34	
Education/Vocational training students	2771	
Of which foreigners	873	31.5
Number of schools	4	

Data source: Federal/state data processing and statistics department, NRW, 2002

Child care places

There are 566 institutions for children from the age of 0 till under 11 years old[317]. Table 12 shows the number of child places and number of children according to age groups.

Table 12. Number of child care places according to age group and number of children

Age group	Number of places	Number of children
0 to 3 years	1106 (nurseries)	27 460
3-6 years	26 484 (kindergartens)	27 415
6 till under 11	7279 (day care nurseries)	43 836

Data source: Office for children, youth and family. Office for town planning and statistics, Cologne, 2003

Senior houses' places

There are 70 institutions for geriatric care in Cologne with a total capacity of 7,450 seniors in 2002. A total of 161,681 individuals ages 65 years and older live in the city[318].

Net income of population

Table 13 shows the range of income and by income for the year 2001 in Cologne. The table shows that the largest group is the one without declaration of income. But from the other groups, the income under 716 euros forms the largest percentage.

Table 13. Population's net income range in the year 2001

Year	Total population	Income range						
		Under 716 euros	Between 716-920 euros	Between 920 and 1125 euros	Between 1125 and 1534 euros	Between 1534 and 2045 euros	From 2045 euros	No income/ declaration
2001	964 000	175 000	65 000	64 000	150 000	114 000	89 000	306 000
In %	100	18.2	6.7	6.6	15.6	11.8	9.2	31.7

Data source: Federal/state data processing and statistics department, NRW and statistics, 2003

Employment and unemployment in Cologne

Cologne can be described as a city of trade and services. The main jobs are industry, banking, insurance, transportation, hand craft, economic, public service, and free jobs. Main industries are vehicle-production and pharmaceutical industries.

Working conditions that threaten health are predominant among unskilled or semiskilled workers compared with the German population with only 10% of unskilled or semiskilled workers; the proportion of such workers is much higher in all migrant subgroups. Table 14 shows the unemployment by the end of September 2003 according to number, gender, age and quote. There has been an increase of unemployment between the years 2001 and 2003 by 1.3%.

Table 14. Number and percentage of unemployed by gender, age, nationality and quote

Unemployment on the 31.12.2002 (from the Federal Labor Office/Employment Office)	**Number**	**Percentage**
Total quote 2003	59657	13
Change in comparison to 31.12.2001	3885	6.9
Males	36 032	60.9
Females	32 625	39.1
German	39 606	70.3
Foreigners	17 530	29.7
Under 25 years	4992	8.9
55 years and older	7820	13.9
Unemployment quote on:		
31.12.2001		11.7
31.12.2002		12.3
31.12.2003		13.0

Data source: Office for town planning and statistics, Cologne, 2003

Social welfare assistance recipients

Table 15 shows the number of recipients of continuous social support according to nationality and gender.

Table 15. Number and percentage of social help recipients according to nationality and gender

Features	**Number**	**Percentage**
Social help recipients in January 2003	66 103	
German Men	17517	26.5
German Females	36409	55.1
Total foreigners	25491	39.2
Foreigner men	12155	18.4
Foreigner women	13 786	20.9
Quote of foreigners		14.5

Data source: Office for town planning and statistics, Cologne, 2003.

Homeless people

The number of homeless people in Cologne in the year 2002 was 5,592[319].

8.1.3 Geography and surface

Cologne city is the biggest city on the Rhine River in the NRW region of Germany and is considered to be a multicultural metropolitan. The size of the city is 405.15 square km divided as 230.25 square km on the left of the Rhine and 174.87 square km on the right of the Rhine. The city's border is 130 km long. The extension of the city from north to south is 28.1 km and from west to east 27.6 km.

Cologne is positioned at Latitude:, 50º 56́, North. Longitude:, 6˚ 57́. The highest point in the city is 118.04 meter over sea level and the lowest point is 37.5 meter over the sea level. The city is a main tourist attraction, and in 2002, around 1,826,596 tourists came to visit the city[320].

The population density is 2,518/ square km. Parks and green areas cover 37 square km. The land for industry covers 82 square km. The forests cover over 56 square km. The city is divided into nine districts: Innenstadt, Rodenkirchen, Lindenthal, Ehrenfeld, Nippes, Chorweiler, Porz, Kalk and Mülheim.

8.1.4 Religion

Only 42.5% of the population is Catholics. Apart from Christian religion, there are other religions such as Islam and Judaism. There are unaffiliated or other religions as well. And as in other cities, there are churches, mosques and synagogues to practice religion. There are around 3 million Muslims living in Germany forming around 30% of patients at clinics or hospitals[321].

8.1.5 Housing and buildings

There are about 521,562 houses in the city. On average, each inhabitant has a house surface of 36.1 square meter. 56% of the population lives in the same house for over 5 years. The biggest building is the TV tower. It is 243 meter high. Dom Cathedral is also a very important building in the city and it is 157 meter high[322].

8.2 Information about the center (BFmF)

The main services are concentrated on education, meetings, supervision and counseling including a homeopathic clinic. These in details are:

1. Education
    - School leaving certificate.
    - School homework supervision and assistance.
    - Language courses: German, Arabic, English, Turkish, and French.
    - Computer courses.

- Computer tasks for the preparation of an office career.
- Family education.
- Full-time seminars: religious, educational and intercultural themes.
- Health education courses.

2. Meetings
   - Youth forum for girls from the age of 16 years.
   - Creative working groups.
   - Theater.
   - Holidays and free-time program.
   - Internet Café.
   - Café with hot and cold cuisine.
   - Open meeting for members.
   - Summer festival.
   - Participation in the intercultural week of the city of Cologne.
   - Open Day.
   - Children's party for the Islamic festivals.
3. Supervision
   - Supervision of children during courses (children day care in the nursery).
   - Supervision for the staff's children.
   - Assistance to women in making appointments and written correspondence with authorities and governmental offices.
   - Social education supervision for students and course participants.
4. Counseling
   - Social counseling in German, Turkish, Arabic, English and French.
   - Psychological counseling in German, Turkish and Arabic.
   - Educational counseling in German, Turkish and Arabic.
   - Health counseling through the homeopath clinic that is open twice a month.

8.3 Foreign population in details

Foreigners form around 18.9% of the total population in Cologne, and most of the foreigners come from Europe. This part is important for the planning of medical care; so it is important to know the rates and the ratios of different indicators. There is a difference in the social level and the structure of the foreigners' population in comparison to the general population[323]. Moreover, foreign nationals employed in Germany were found to have high health risks and higher occupational accidents rates compared to Germans; chronic diseases are more frequent and emerge at a younger age and barriers may exist towards gaining access to appropriate medical care[324].

Data show that most of the foreigners in general are concentrated in the following areas of the city: Mülheim, Meschenich, Lindenthal, Kalk, Humboldt, Ehrenfeld, Chorweiler, Buchheim, Vingst, Sülz, Seeberg, Porz, Ostheim, Ossendorf, Nippes, Neustadt-Süd, Neustadt-Nord, Neuehrenfeld, and Neubrück.

The following data present more data-related to migrants:

Nationality

Turkey is the origin of the largest group of immigrants in Cologne, and followed by immigrants from Europe (Belgium, Denmark, Finland, France, Greece, Britain, Ireland, Italy, Luxemburg, Netherlands, Austria, Portugal, Sweden, and Spain), former Yugoslavia (Bosnia Herzegovina, Croatia, Slovenia, Yugoslavia, and Macedonia), Africa (Algeria, Angola, Ethiopia, Ivory Coast, Nigeria, Ghana, Kenya, Congo, Zaire, Morocco, Cameron, South Africa, Senegal, Somalia, Togo, Tunisia, Egypt), America (Canada, the United States, Argentina, Brazil, Chile, Columbia, Cuba, Mexico, Peru, and Ecuador), Asia (Afghanistan, Azerbaijan, Georgia, Srilanka, Vietnam, Korea, India, Indonesia, Iraq, Iran, Israel/Palestine, Japan, Kazakhstan, Jordan, Kyrgyzstan, Lebanon, Pakistan, Philippines, Syria, Thailand, Uzbekistan, China) and Australia[325].

Number of foreigners according to age group[326]

The distribution in age-groups has been relatively constant in recent years. About 50% are between 0-29 years old, while the others are 29 years and older. Within the age group 0-29, the age group of 0-19 years old went down from 30% to 25.9% in relation to past years, which is affected by immigration laws[327]. Table 16 shows the number of foreigners in the city of Cologne according to age groups (data from 31.12.2002). Data show that the largest age group is between 25-29 years old.

Whereas more than 60% of the migrants in North Rhine-Westphalia were less than 35 years old, this age group compromised less than 40% of the German population. Correspondingly, less than 4% of the migrants were 65 years old or older, whereas Germans of this age compromised nearly 20% of the German population[328].

The healthy migrant effect appears because potential working migrants were young and healthy and also had to pass medical check-ups in their own home countries. The second reason for it is related to remigration of elder people and people with health problems. This effect was not only limited to official statistics but was also found in survey analyses and could not be seen as a general register specific bias[329].

Table 16. Number of female and male foreigners by age group

Foreigners in **total** according to age group, 5 years age group, 31.12.2002																			
0-1	**1-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**50-54**	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85 and more**	**Total**
883	6627	10948	11062	10881	16449	20304	20041	16483	12146	10496	10673	10196	9243	5294	2805	1520	836	793	177690
Foreigners, **females** according to age group, 5 years, 31.12.2002																			
445	3197	5318	5319	5467	8819	10544	9843	7418	5486	5266	5853	4799	3383	2061	1303	837	469	492	86319
Foreigners, **males** according to age group, 5 years age group, 31.12.2002																			
438	3430	5630	5743	5414	7630	9760	10198	9065	6660	5230	4820	5397	5870	3233	1502	683	367	301	91371

Data source: Federal/state data processing and statistics department, NRW, 2003

Migrants from Arab countries in Germany and in Cologne

A literature review yielded the following information about Arab migrants in Germany and in Cologne:

There are around 280,000 Arabs who live in Germany, but Arabs are probably the least known of the large migrant groups. The actual migration of Arabs to Germany began with the recruitment of Moroccan and Tunisian workers by the governmental treaties of 1963 and 1965. The 24,000 Tunisians and the 81,000 Moroccans differ from other Arabs by their longer duration of stay. Many Moroccans in Germany found work as large groups, mostly in mining, but also in the textile and chemical industry. Thus, strongholds of Moroccan immigration developed: 85% live in North Rhine Westphalia and Hesse. Around one half is spread over only ten big cities, among them Frankfurt (around 9,500), Düsseldorf (6,000), Dortmund (3,300), and Cologne (around 7,500). The first Tunisian and Moroccan working migrants were exclusively males. Then, they brought their families into the country after recruitment stopped in 1973. Thus, their number doubled between 1973 and 1981. There are also migrants from Egypt of which only 24% are women. Most of the first generation migrants have little school education and industrial training. Due to the loss of basic jobs in the industrial sector, many have problems finding a job. Migration from other Arab countries is due to the country's perturbed economic and political situations.

Arabs also came to Germany because of political persecution. War refugees form the second large group next to the working migrants. These mainly include the Palestinian refugees, many of them with a Jordanian, Lebanese or Syrian passport. Their number is around 10,000. The first groups who came to Germany were students and businessmen. Then many asylum seekers fled between the periods of 1979-1990.

The Lebanese mainly came after the civil war in the 1980s, but many of them are unemployed. The migration of Algerians to Germany began at the end of the Second World War. Some came for studying and for professional training and then as asylum-seekers due to the civil war. Their number is around 17,200 today. The number of Iraqis has risen and it is around 51,200[330].

Information about the number and age groups of the Arab community in Cologne was received from the Office for town planning and statistics, Cologne-Statistics Information System on the 27th of April 2004 by email. The data requested were on the population of Arabic-speaking countries, and these included: Algeria, Egypt, Jordan, Iraq, Kuwait, Lebanon, Libya, Morocco, Mauritania, Oman, Palestine, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, and Yemen. For this section, there was also the need to collect data about Arab migrants in Cologne. Another source of data is the website of the city of Cologne on the internet[331]. See tables 17, 18, and 19 for details. The statistics showed that the number of Arab migrant women in the city of Cologne is 2,547 in the year 2003. The age group between 18-35 years old forms the biggest group among males and females.

Table 17. Number of male and female Arab migrants in Cologne by district and age group

Arab total population (males and females) according to country of origin and age groups on 31.12.2003*								
Nr.	City district	Age (from .... till under .... years)						Total
		00 - 18	18 - 35	35 - 45	45 - 60	60 - 75	from 75	
1	**Innenstadt**	89	633	164	93	50	11	1,040
2	**Rodenkirchen**	156	337	107	43	16	10	669
3	**Lindenthal**	45	285	89	43	23	2	487
4	**Ehrenfeld/Neuehrenfeld**	152	422	137	63	15	5	794
5	**Nippes**	86	315	95	77	24	4	601
6	**Chorweiler**	113	183	69	40	12	3	420
7	**Porz**	234	279	110	66	21	7	717
8	**Kalk**	314	987	221	112	44	12	1,690
9	**Mülheim**	219	632	193	80	46	6	1,176
	City of Cologne	**1,408**	**4,073**	**1,185**	**617**	**251**	**60**	**7,594**

Data source: Office for town planning and statistics, Cologne-Statistical information system, 2004

Table 18. Number of male Arab migrants in Cologne by district and age group

Arab male population according to country of origin and age group on 31.12.2003								
Nr.	City district	Age (from .... till under .... years)						Total
		00 - 18	18 - 35	35 - 45	45 - 60	60 - 75	from 75	
1	**Innenstadt**	44	465	128	66	40	8	751
2	**Rodenkirchen**	75	233	80	26	15	9	438
3	**Lindenthal**	25	215	64	25	18	1	348
4	**Ehrenfeld/Neuehrenfeld**	71	289	93	43	12	2	510
5	**Nippes**	45	222	71	49	16	3	406
6	**Chorweiler**	59	101	47	25	9	2	243
7	**Porz**	120	158	67	38	17	6	406
8	**Kalk**	169	728	168	70	30	10	1,175
9	**Mülheim**	105	434	146	47	32	6	770
	Cologne city	713	2,845	864	389	189	47	**5,047**

Data source: Office for town planning and statistics, Cologne-Statistical information system, 2004

Table 19. Number of female Arab migrants in Cologne by district and age group

Arab female population according to country of origin and age group on 31.12.2003								
Nr.	City district	Age (from .... till under .... years)						Total
		00 - 18	18 - 35	35 - 45	45 - 60	60 - 75	from 75	
1	**Innenstadt**	45	168	36	27	10	3	289
2	**Rodenkirchen**	81	104	27	17	1	1	231
3	**Lindenthal**	20	70	25	18	5	1	139
4	**Ehrenfeld/Neuehrenfeld**	81	133	44	20	3	3	284
5	**Nippes**	41	93	24	28	8	1	195
6	**Chorweiler**	54	82	22	15	3	1	177
7	**Porz**	114	121	43	28	4	1	311
8	**Kalk**	145	259	53	42	14	2	515
9	**Mülheim**	114	198	47	33	14	0	406
	Cologne city	695	1,228	321	228	62	13	**2,547**

Data source: Office for town planning and statistics, Cologne-Statistical information system, 2004

Other data concerning health of migrants will be presented in the following results section.

8.4 Results of the study

This section presents results from the different forms of data collected; this includes results from focus groups, key informants, open group discussion, questionnaire, intervention and the evaluation results.

8.4.1 Results from focus groups

As it was mentioned in the data collection section there was a demographic sheet that was distributed to the participants for the aim of describing the sample as well as the open-ended questions and probes used to get in-depth information. The following two sections present description of participants and themes that arose in the meetings.

Description of participants in the focus groups

As was previously mentioned the number of the groups held was 5 and the total number of women who participated in them was 41.

The simple questionnaire asked before starting the focus groups collected the following data that described the participants. Data were collected on eight main items:

- Age of women: it ranged between 19 and 54 years and mean age was 32. Most of the women were between 20-29 years old.
- Marital status: most of the women were married (n=36). There was one divorced woman, one engaged and the remaining three were single.
- Number of children: it ranged between 0 to 9 children for the married women. The divorced lady had one child.
- Level of education: most women had higher than secondary education level.
- Work or profession: most of the women were housewives (n=27), 7 had a job; 3 were factory workers, 2 secretaries, 1 pharmacist, 1 doctor assistant, and 3 students.
- Country of origin: women came from ten different Arab countries, mainly from North African countries. All women who took part in the focus groups had a non-German nationality.

- Length of stay in Germany: this ranged from less than one year to more than 20 years.
- Knowledge of German language: most women ranked themselves as being good in German (n=25). The rest of women considered themselves to be poor or do not speak it at all.
- Type of health insurance: nearly all the women had public/social health insurance except for 2 who had private health insurance. Table 20 summarizes the descriptive information about women who participated in the five focus groups (n=41).

Table 20. Descriptive demographic data of women who participated in the focus groups (N=41)

Item	**Fr.**	**Item**	**Fr.**
Age		**Level of education**	
Below 20 years	1	Illiterate (no entry of school)	6
Between 20 and 29 years	16	Elementary (from 1st to 6th class)	6
Between 30 and 39 years	11	Preparatory (from 7th to 9th class)	6
Between 40 and 49 years	11	Secondary (from 10th to 13th class)	7
50 years and over	2	Higher (Diploma, university…)	16
Marital status		**Length of stay in years**	
Single	3	Less than one year	6
Married	36	1 to 5 years	7
Divorced	1	6 to 10 years	8
Engaged	1	11 to 15 years	3
Number of children		16 to 20 years	4
0	8	More than 21 years	13
1	2	**Level of knowledge in German**	
2	1	No knowledge at all	1
3	5	Poor or weak	8
4	2	Good	25
5	4	Excellent	7
6	1	**Type of health insurance**	
7	3	AOK	33
8	0	KKH	1
9	1	TKK	2
Country of origin		BKK	2
Syria	5	IKK	1
Tunisia	4	Private	2
Morocco	18		
Egypt	1		
Iraq	2		
Libya	1		
Sudan	1		
Palestine	5		
Lebanon	3		
Jordan	1		
Total number of women	**41**		

Themes and contents of the focus groups

After collecting all the above basic information, women were asked different questions using the guide Appendix D. The aim was to collect information, views, attitudes and beliefs from them, being migrants, in order to define the major health problems and also to prepare and brainstorm ideas for an intervention step of the COPC approach.

1. Health concept and health beliefs

All participants considered the concept of health as being "the most important thing in life without which one cannot do anything or any activity". Health was described in all the groups as "being free from disease". It has also been defined as "the health of the brain". One 42 year old woman expressed *"the psychological status could be the leading cause to physical health; we keep on thinking about our relatives at home, if they are healthy, ill …".*

A very important statement concerning woman's health, especially women who migrate, is the stress imposed on them by the process of migration itself. This stress could be one of the leading causes affecting the health of women. Another 38 year old woman quoted *"health is having healthy thoughts".*

Women commented on their increased susceptibility of becoming ill due to different factors including stress. A 30 year old woman stated *"the woman is more susceptible to diseases than the man because of the psychological stress on her, especially for a foreign woman to come to Europe. She will have more responsibilities than in her country of origin as she has to cope with all the new changes and the new system. This puts her under more stress".*

A 40 year old woman stated *"the health of the woman is more affected than the health of the man as she has to take care of children, housework and do everything".*

Healthy environment, healthy nutrition, surrounding objects, and prevention activities were discussed to be important elements of health in all the focus groups. A 25 year old woman said *"… good nutrition and healthy food are major items of good health".* Women also talked about the importance of prevention activities; a 35 year old woman excerpted *"health in my opinion is the protection of body from illness".* Another 29 year old woman said *"health is to live in a comfortable environment without having problems*

in the family". This gives an insight about the kind of problems that may be present; in this case family problems.

2. Requirements for health/what should a woman do to stay healthy?

Different elements were mentioned as important requirements to maintain the health of the woman. There was a concentration on both the individual/physical factors as being important for health as well as the social (such as the relations with others, particularly the family), psychological and spiritual factors (see box 6, 7, and 8). They emphasized the mental well-being and adaptation to life in Germany as being important to be healthy. Physical requirements to be healthy were mentioned also. A 32 year old woman said *"women should take care of themselves and should also give sometime to their well-being and not to devote all the time to the housework ignoring themselves"*. Another 26 year old woman stated *"some women forget themselves even in one hour that could be devoted to reading in a book"*.

On the other hand, psychological, spiritual and social requirements were of great importance for them to deal with stress. A 40 year old woman said *"women should socialize with others and have friends in order to get the feeling of loneliness away"*.

Religious relations with Allah/God were also described to be a major method for releasing psychological stress.

Few women also expressed that there is an obstacle sometimes for socializing and going out. They claimed that the problem sometimes is having mixed places of men and women such as the swimming pools or gymnastic halls. This, as expressed by women, prevents them from participating in such activities. While others mentioned that there are already 'separate' special places that are only for females, still they did not go there.

Physical requirements

- To have enough sleep
- Regular screening and check ups
- Follow up during pregnancy
- Healthy food and nutrition
- Physical exercise
- To concentrate on prevention, primary care
- Exposure to sun light

Box 6. Physical requirements for being healthy as described by focus groups' members

Psychological/spiritual requirements

- To deal with things and obligations of life in a realistic way and not in a nervous state
- To have a peaceful and clear psychology
- Read Koran (Holy Book)
- Stay in a close relationship to Allah/God
- To find good ways to take away the feeling of loneliness
- To go on vacations and holidays from time to time to refresh the self

Box 7. Psychological and spiritual requirements for being healthy as described by focus groups' members

Social/other requirements

- To organize and plan one's time
- Understand the relationship with husband and other people
- To have good friends
- To socialize with other people
- To integrate with surrounding society and not to be isolated
- To be responsible for own actions
- Satisfaction with what one has and not to try to imitate others

Box 8. Social and other requirements for being healthy as described by focus groups' members

3. Major health problems among Arabs in Cologne

Women were asked about the major health problems that they or their family members have experienced or health problems they heard about from other Arab families in Cologne.

There were different health problems that were presented. They were grouped as physical and psychological problems in table 21.

Table 21. Frequency of major health problems among Arab migrants as described by focus groups' members

Physical health problems	Frequency	Psychological health problems	Frequency
Diabetes Mellitus	11	Psychological stress	35
Hypertension	26	Depression	31
Obesity	17	Frustration and feeling down	28
Migraine headaches	15	Schizophrenia	11
Back pain	24		
Hypercholesteremia	22		
Cancers, mainly breast cancer and Leukemia	28		
Asthma, due to change in weather	10		
Rheumatoid arthritis	9		
Skin diseases, allergy and infections	16		
Anemia	23		
Hair loss	7		

Looking through all the transcripts of the focus groups, it was clear that there has been much concentration on psychological issues as being a major cause of many other problems that women face. A 43 year old woman said *"the main problem we face is psychological problems due to being alone and also feeling lonely in a foreign country. We are away from our relatives and friends. We can not talk to anyone when we face a problem or feel down"*.

Another 50 year old woman said *"feeling lonely makes one weak and depressed…"*.

Women mentioned that the onset of distress symptoms or physical illness is related to being in a foreign country, which is Germany in this case. More than one woman mentioned the following: *"we feel ill only when we are here in Germany, but when we go for a vacation to visit our families, relatives and friends in our home countries, all the illness signs and symptoms disappear and we become healthy as if we did not suffer from anything"*.

A 51 year woman stated: *"I feel that women suffer from psychological problems as it is hard to cope and integrate in this new society. Being away from home country makes us women work harder and harder to achieve the best results and outcomes, and this is also to show the other people around us (Germans) that we can also be productive. Add to*

that, when women feel that they fail to achieve this, this puts them under more stress and depression, and I call this "depression from the failure to achieve goals".

Religious and cultural differences affect the psychology of women negatively. One 46 year old woman said*: "…seeing what is prohibited by our religion (Islam) as socially and culturally accepted by the society that we are living in puts our psychology in a very low and down status as we can not accept this easily as we consider this as violation of our own religious beliefs. Moreover, this puts a big burden on the parents, who try to explain to their sons and daughters those cultural differences. But this could be not convincing to the young generation due to age differences and being born and raised here, not seeing the culture that their parents talk about. In turn this puts the family in a bigger kind of confusion and stress".*

There was also a concentration on missing the religious occasions and the effect on their feelings. One woman said: *"it is impossible here to follow the traditions as you do in your home country. In the month of Ramadan, the whole family gathers, but it is not possible here"*. Another woman said: "*we can not hear the calling for prayer from mosques as we used to in our home country, we follow the time table on schedules, and this gives a stressful feeling when you compare*".

4. Difficulties women face when seeking health care

Women mentioned varies difficulties that they face when they seek health care which were related to the health care system or the procedures in clinics or hospitals. These were the following:

- Long waiting time. A 33 year old woman stated "*sometimes I wait for two hours before my turn comes to see the doctor. I always go ½ an hour before the appointment*". Another 26 year old woman said "*if I am a few minutes late, health staff complains a lot but I do not have the right to complain about waiting too long for them*". Another 41 year old woman said "*one has to devote a full day when he/she has an appointment with the doctor. You cannot do other activities that day as you should put the delay that you might face before and after the appointment into consideration*".

- Short examination time by the doctor. This was presented as a major dissatisfaction as women are not given much time to explain their problems or to understand more about the health problem they have. A 25 year old woman said *"sometimes I wait for two hours but the doctor sees me only for few minutes, which is not enough to explain what I have. Examination is done quickly and in a rush"*. Another woman said *"some doctors explain things so quickly that you do not have the time to comprehend all what they say or to ask for more explanations; doctors are so quick"*. A 49 year old woman said *"doctors have a computer in front of them that they feed information into. They do not pay attention to the patient as they do to the information that they want to fill in to their computers. This gives the patient the feeling of being a machine rather than being a human"*.
- Communication problems. Language appeared to be a major obstacle in communicating with doctors and health staff. Some women presented the fact that they feel as not being given enough attention because of this. Other doctors -as women mentioned- will not give the attention until they make sure that the patient masters the German language very well. A 37 year old woman said *"if you do not speak the German language, you will not be given the time to explain your problem in details"*. Another 33 year old woman said *"the feeling of not explaining the health problem correctly gives one a dissatisfactory feeling with the effect of treatment and healing"*.

  Women also mentioned the problem of the unavailability of counseling services in Arabic, mainly the psychological counseling. If a woman does not have someone to talk to and thinks of going to a counseling service, it is really hard to find one.

  Some women mentioned that they have to take a companion for translation; this could be their husbands, sons, daughters or friends. There was also another alternative or choice that women mentioned to avoid the language problems, which was to go to an Arab doctor who could speak the language. Many women expressed their will to go to an Arab doctor in order to avoid misunderstanding that could be a result of not mastering the language. Only one woman mentioned

that she prefers to go to a German doctor, giving the reason that she has more trust to explain her problem to a foreign person than to tell it to a person from the same culture. She said *"Arabs here know each other and I have fear that my problems will be mentioned to others and will be known by them"*.

- Many women said that this problem of communication brings the feeling of prejudice and discrimination against them. One 35 year old woman said *"being unable to speak the language makes one feel that there is no enough attention paid to him/her by the medical staff and thus gives a feeling of being discriminated"*.
- Unavailability of health education materials in Arabic language. Women mentioned that it is seldom that they have seen brochures, leaflets or pamphlets in Arabic at clinics or hospitals, even at Arab doctors' clinics. Women mentioned that it would be of great benefit to have health education materials in Arabic at doctors' clinics or hospitals. One woman said *"one can at least read during the long waiting time"*.
- Treatment expenses: paying 10 euros co-payment when going for the clinic every three months due to new changes in the health system. Women expressed that this new reform puts a financial burden on the family, especially when the number of family members is large.

5. Sources of information on health

Women were asked about sources of health information. The main sources mentioned were related to reading activities and those included:

- Magazines and publications from the insurance companies.
- Internet when available.
- Television "Satellite Arabic channels", mainly programs on health.
- Books (in Arabic) that they bring from their home countries.
- Pamphlets and brochures available at clinics (for the ones who can read and understand German).
- Family and friends to exchange experiences about health.
- Physicians when the language allows for that.

And when women were asked about the *best* sources of health information, the following were mentioned:

- Physicians were mentioned to be the best source of information. The majority of women would seek advice from the professional sector and mainly the doctor This could be due to the fact that there is a face to face interaction between the patient and the health provider which in turn gives it a more lively communication, and enables the patient to ask and inquire more about the health problem or treatment choices.
- Publications and programs in Arabic were rated to be a high priority. Due to the fact that there are no health education materials in Arabic, almost all women requested to have them in Arabic.
- Health education through women and discussion groups.
- Talking to other friends and family members was also mentioned to be a satisfactory source of information given the fact they had a previous similar experience.

6. Screening examinations

There was a confirmation on the lack of knowledge concerning the screening health examinations among the focus group members, and this showed a lower threshold for seeking help and support from sources of information.

Women were asked what screening they do for their body. The following screenings were mentioned. Table 22 presents the number of women by type of screening they performed.

Table 22. Number of women by type of performed screening tests

Type of screening	Number of women
Breast self examination (BSE)	7
Mammography	2
General and breast examination by doctor	9
Uterus screening/Pap smear	6

When women were asked if they know how to perform Breast Self Examination (BSE), most of them did not know the method. Only few women obtained screening exams. Of the 24 women 30 years and older, 2 had obtained a mammogram and 5 had ever had a pap smear.

When women were asked about the reasons for ***not*** obtaining screening, they mentioned the following barriers:

- Fear of discovering a serious disease or illness. One 26 year old woman said "*I have the fear to discover that I have cancer…"*.
- Time consuming. A few women said *"going to the doctor takes the whole day even if I have an appointment, and I always have lots to do at home"*.
- Self-ignorance about health. One 40 year old woman said "*we women are careless about out health…"*'.
- Some tests are painful. One 37 year old woman said "*I have heard that the mammography is painful…"*.
- Being shy to do the examinations; especially if the examiner is a male. One 24 year old woman said "*I feel so shy to show my body parts in a medical test"*.
- Financial/economical reasons, as one has to pay for some tests himself/herself in addition to the 10 euros co-payment every time they seek health care within three months.

8.4.2 Results from key informant interviews and secondary data

This section required the collection of information from experts in the health section and statistics about migrants in the city of Cologne as well as data from literature.

Description of the key informants

The participants had the following characteristics: six were females (homoeopath, gynecologist, social counselors, psychological counselor and the director of the center). The other five included male physicians from the following specialties: two general physicians of which one is a surgeon as well, a urologist, a psychiatrist and neurologist, an officer from the Office of Health in the city of Cologne. All physicians and one of the social workers spoke Arabic. The others spoke German.

Key informants were from the following nationalities: German 3, Syrian 3, Kurdish 1, Palestinian 1, and Turkish 3 (psychologist, social worker and head of one center who spoke German and English).

Themes that emerged from key interviews

The following themes came out from the interviewees:

1. Data on health issues among migrants are lacking

The key informant from the Office of Health in the city of Cologne was questioned about data on health indicators among migrants, health education materials, services to Arab speaking migrants and previous studies on them.

The information that was received from the Office of Health in the city of Cologne that was held over the phone on 19.04.2004 and on 25.05.2004 revealed the following:

- No data are collected on health indicators (mortality, morbidity) distinguish between Germans and non-Germans on the city level; the problem of having more than one citizenship by few migrants makes it hard to get the accurate data on health indicators.
- Some data on health indicators are available for German and non-German nationalities on state level; in this case it is NRW. According to the health report on NRW[332], these were limited health indicators, such as infant mortality rate, birth weight, tuberculosis, AIDS, traffic accidents, oral health, handicaps, and some other. The main classification of the non-Germans was based on migrants coming from Greece, Italy, Portugal, Spain, Yugoslavia, and Turkey. The only health indicator that included an Arabic country (Morocco) was the one related to handicaps, which rate was 33.7/1000 inhabitant of which 83.5% were men and 16.5% were women.
- There are no health education materials that are published in Arabic. There were few materials in Turkish, Russian, Spanish and Italian.
- Concerning the availability of centers that provide counseling (social or psychological) in Arabic language, the office of health only mentioned the health center of migrants in Cologne (the director of this center was interviewed), but this center provides counseling mainly in Turkish, Russian, and Italian, not in Arabic, unless this is requested in advance.

It is worth to mention that all ambulatory care, including both primary care and secondary outpatient care, has been organized almost exclusively on the basis of office-

based physicians. Ambulatory physicians offer almost all specialties, such as anesthesia, dermatology, gynecology, internal medicine,…etc. and insured people can choose their physician, but they have to use the services of one general practitioner at lease for three months[333].

2. Proportion of Arab migrant care seekers

Key informants stated that Arab patients formulate 10% to 45% of all patient nationalities. It was reported that the proportion of Arab patients is the lowest for psychological counseling. This could be related to the negative perception surrounding psychological illness and patients in the Arab culture, and the stigma associated with it.

3. Main observed health problems

Table 23 shows that psychosomatic and psychological problems rank the highest among the other health problems from the view of the key informants.

Table 23. Frequency of health problems among Arab migrants as reported by key informants

Problem	Frequency	Problem	Frequency
Psychosomatic disorders	9	Cancer	5
Depression	5	Asthma	3
Hypertension	4	Overweight	4
Diabetes mellitus	6	Psychological problems	8
Migraine	3	Backaches	3
Nervous stomach (heart burn, stomachache…)	4	Anemia	6
Joint problems (Rheumatoid arthritis)	2		

A number of factors were mentioned by the key informants as being associated with these health problems and psychological stress. These were the following:

- **Isolation**

As migrants live away from their home countries, relatives, families and friends, they feel isolated. One key informant said "*the psychological distress of migrants makes them susceptible for more mental health problems and stress. Most of the times, they are isolated either from their relatives and family in their home country or isolated here in Germany. They prefer to have a limited circle of people from their own home countries; they do not like to go out, and poorly speak the German language which makes the stress*

accumulate more. This could lead to depression in some cases. But this stress may be reflected in somatic forms such as headaches, stomachaches …etc.".

One respondent said "*the soul is part of the body that is affected by the disease first, and then all the diseases are reflections of the disease of the soul"*. Another said "*Isolation and less motivation are observed among the migrant women in general"*.

- **Changes in nutritional habits**

Most of the key informants mentioned that overweight problem among migrants is more common during the recent years; especially among children. Of the reasons that were mentioned are unhealthy dietary habits, the increase in the snack food, and lack of exercise. One respondent related this problem also to psychological reasons, "*when emotional needs of people are not met, they look for ways to ventilate the inner stress. One way could be excessive eating. In the case of migrants, there is a lot of stress from different aspects. First, being foreign in a new country with a different culture, and secondly being discriminated by others*".

- **Loneliness**

Loneliness was mentioned to highly affect physical health and psychological well-being of migrant women. One respondent said *"People think that in such a European country with high technology, migrants will not have any problems. But here, there are a lot of stressors, especially to women that others can not see. The main stressor is that they are here alone; no family, no friends and nobody to support them"*. Another said "*in case women are married, their husbands are mostly the bread winners who are most of the day out of the house, and in their free time they mostly go out to see some friends, and the wife has to stay alone or with children. This kind of atmosphere puts women in a closed environment. And this in turn will be reflected on their psychology*".

- **Difference in culture and system**

The fact that Arab patients prefer to go to physicians from their same culture also plays a role on the way they express their illness. The description of symptoms is affected by culture. It is important to mention that signs and symptoms of psychological and mental problems, or the way they are expressed among migrants differ from the ones among the Germans. One interviewee said: "*It is common, for example, to hear a migrant saying that he/she complains of pain and not mentioning anger"*.

Having more explanations why migrant women are more under stress, interviewees concentrated on culture difference. One said: *"Here, there are two streams of the psychological problems for women. On one hand, women come here to Germany or to any other foreign country from a culture that is very different to the one here. The main thing women miss here is family support. In most cases, women come through marriage; the man who has been living here for many years goes to his home county and marries a woman and brings her with him. Women spend most of the time at home and they do not have a social life as they used to have in their own county"*.

The life system here was mentioned to be different than in migrants' countries; life here is more comfortable but could encourage inactivity. For example, one said: "*if a woman is a housewife and has children, her days are nearly the same; she brings children to kindergarten or school, works at home for a while, brings children back from school, prepares the meal, and watches TV. Sometimes there is shopping and that is it"*. In rare cases some women go swimming or to gym, but this is once or twice a week. Related to this point, it was also stressed that migrant women are not active though they have lots of free time, in comparison to women in their home countries. One respondent said: *"Here (in Germany), they like to be isolated and to stay home. They feel that they are active or productive only if they keep their mind busy with things that they will do all over the year, such as preparing for the month of fasting, or other religious feasts"*.

- **Unemployment**

Unemployment or the difficulty to find a job was mentioned to be a stressor among migrant families, especially if the family has children.

In case women work, they are under another kind of stress, which was called "struggle/competition stress". One respondent mentioned that "*Migrants in general have a lot of stress because they want to show the host country that they are as good as the citizens; this in turn makes them work harder and think more, and this feeling of being always in a kind of a "competition" initiates a lot of psychological pressure"*.

- **Weather**

Cold weather was considered to be a factor affecting health negatively. *"The change in weather could be considered as part of stressors we face"'* one respondent said. Most

women in this sample came originally from warm sunny countries, but in Germany it is cloudy and rainy most of the time, which could have negative effects on some of them. Informants' observations were that migrants get tired more quickly and they are weaker compared to women of the same age who live in the original country that they come from. For example, one said: "*The same activity that could take 30 minutes to be done in their home country, here it takes them one hour or more. It is not clear if this related to the change in weather that could affect the motivation to do things or the psychological status"*.

- **Social problems**

Interviewees who work in the field of social work and psychology mentioned social problems, mainly family and marital problems, to be very common among the Arab migrant women; which consequently affect their psychological status. The main reasons for these social problems as expressed by the interviewees were:

- The main method by which women come to Germany is through marriage. The man who was raised in Germany goes to the home county, marries and brings the wife with him. When those women come here, they have restricted mobility and usually subordination to husband.
- When women come, they have a reality shock as most of them have never been to Europe before, and the picture they had in their minds about the new country could be much different than the reality. This puts women in a kind of confusion of what to reserve and what to take.
- Most women who get married are young in age and are not usually ready to be married and to have a family.
- Women complain of difficulties to communicate to their husbands and they feel of being worthless. Many men do not show attention to their wives.

Respondents added "*All this stress, stemming from being a migrant, is increased by the marital problems that women may have"*. One respondent said: *"I see a lot of cases of what I call psychological violence from men to their wives"*. So it could be that it is not always the case that the problems are only due to migration, but also due to family problems associated with migration itself.

4. Compliance with treatment and check-ups, self-care advice and the inclination to follow advice

All key informants stated that most Arab patients comply well with treatment and diet when prescribed. One key informant said: *"Compliance among Arab patients is good compared to patients from other nationalities. I see that women, for example nowadays, are better informed than before through friends and family members even if they have low education"*.

Concerning the screening/check-ups, most key informants mentioned that the compliance with treatment is better than the compliance with screenings. Doctors have to remind patients of their yearly check ups because patients do not inquire or get information about their routine self-care. Most doctors said: "*In most cases, patients do not ask for the screening by themselves"*.

In case physical exercise is recommended, almost all the respondents mentioned that migrants in general are less active compared to patients from other nationalities. Key informants stressed that when physical exercise is generally mentioned as a means of prevention and treatment for migrant patients, they provide excuses and barriers for not having the ability to perform them. Some of the excuses mentioned were *"My health does not allow me to do exercise"*, *"The weather was too bad to go out"* or *There are no places to exercise"*.

5. Health education materials

The analysis revealed that key informants are not aware of any health education materials (brochures, pamphlets, leaflets, booklets …etc.) that are published in Arabic language either by the organizations working on health or by the insurance companies. Two respondents mentioned that so far there are some brochures that are published in Turkish and Russian languages.

All the informants highly recommended having materials and publications in Arabic. One respondent said: *"It is usually the responsibility of doctors to explain to patients what to do, but this consumes lots of time given there are many patients at clinics. We (physicians) usually make it quick and superficial, but when printed materials are*

available, this will save time for physicians and doctors, and moreover will inform the patient more deeply and efficiently".

6. Health information provision

Most of the respondents thought that the best method to inform migrant people about health is through the physician him/herself. This can be explained because of the unavailability of information sources in Arabic and most of the migrants; mainly the first and part of the second generations do not speak the German language.

One respondent said: *"I myself held a seminar on women's health in a center here as I felt there is much need in this regard, but this was a personal initiative. There is nothing that is arranged formally for migrants. If activities are done, they are usually done informally"*.

Another important point that was raised here is the necessity to inform and raise the awareness among patients about the available services and their health rights. One said: *"For example, many patients do not know that there are clubs or unions or self-help groups for different diseases that they can enroll in"*. Another respondent said: *"Each woman, for example, has the right to have someone to help her in the house during the first few days after giving birth, which is covered by the insurance company, but many migrant women do not know this"*. Another elaborated "*Migrant patients have the right to ask for a translator to explain procedures before an operation is performed, in case an operation is ordered, but many do not know this"*.

7. Barriers for seeking health

Incompetence in German language was seen to be as a major problem among migrants in general, especially among the first and part of the second generations. This was seen to be the hindering factor from seeking care and getting information about different topics from different sources, using counseling services and getting socialized with the community and the activities held in it.

Most of the informants, given that they speak Arabic language, consider the language to be the main reason why patients seek health at their clinics. Patients prefer to go to a physician who speaks the same language, as it is much easier to express the symptoms

and feelings in the mother-tongue language. One respondent said: "*Most of my patients come from Turkey, Arabic-speaking countries and Kurdistan. I am sure that they come because it is easier for them to communicate with their own language and they can express themselves in a better way"*.

One physician said: *"I have sometimes to refer my patients to a German doctor and I always advise them to take a companion with them who can speak German, so that they can translate their problems properly"*.

In the case of psychological and mental problems, it has been very clear that there are no centers that provide counseling in Arabic language, which is a big deficit in this field. The psychiatrist said "*the unavailability of Arabic speaking counselors puts me under big pressure as I have many patients who need it. This should be done by a counselor and not by me, but I do it even partially due to its unavailability and the high need of patients"*.

Another key informant added *"It is impossible that we imagine all the migrants speaking German. The best solution is to produce some education materials in Arabic language as it was produced in other languages and to assign personnel who speak Arabic in the counseling services"*.

There was only one key informant who said that he notices that sometimes migrant patients prefer to go to German doctors even if they do not speak the language very well. The reason as he explained was that "*sometimes patients are ashamed to speak about certain private problems such as the sexual ones with someone from the same culture"*.

Thus, in addition to the language barrier, there are cultural factors hindering patients from seeking health care.

When key informants were asked for explanations on why women do not seek psychological help given those problems form a major section among other health problems. The following were the main given reasons:

- Fear of stigmatization as well as culture and cultural beliefs play a big role in the issue of seeking help. Women do not like to go to a psychologist as this field is still considered to be a closed private area in eastern countries. It is not common to tell others about private things and feelings in the Arab culture.
- Unavailability of counselors who can speak the language.

- Few awareness campaigns and programs about the topic in the media than in other cultures. For example, Turkish migrants are becoming more oriented on the topic of psychology as there are a lot of programs on TV in this regard.
- Lack of knowledge about psychological health in general among women.
- Level of education, culture and how the person is raised. There are different ways in which people learned how to deal with a problem in different cultures. So, it could be that a woman is taught not to talk to others about her problems, which leads to the accumulation of those feelings in herself.

It was also mentioned that apart from communication problems that women face, many are too shy to express their problems; especially when the doctor is a male and the woman has gynecological problems.

8. Methods of how women express stress

Key informants were asked how women express stress. The following methods were mentioned:

- The main way women express their stress is by crying. It is very important for women who live in Germany that their family in the home country -if there is none in Germany- does not know about their marital problems in order not to bring any worrisome for the family. This of course puts the woman under a bigger stress as she will be the only one thinking of her problems, which at the end could lead to higher psychological stress and sometimes mental problems.
- If women are mothers and have children, some express it on children; they could deal harshly and nervously with them.
- In some cases, women talk to other women from the relatives or friends; who had similar problems.
- In other rare cases, they seek psychological help but need time to build trust with the counselor.

8.4.3 Health situation and health services in Cologne (secondary data)

In order to get a better picture of the health situation in Cologne, there was the need to refer to literature concerning general data as well as certain health indicators[334].

Basic data on health services

Table 24 shows basic data on health facilities and personnel in the city. This includes the number of doctors, number of pharmacies, general hospitals, beds, medical doctors, and personnel.

Table 24. Basic health services related data in the city of Cologne: number of physicians, hospitals, beds and medical personnel

Item	Number
Number of doctors on 1.1.2003	1885
Of which dentists	668
Pharmacies	280
General Hospitals in 2001	18 of which 4 are public and 14 are general
Number of beds	7,233
Bed use in %	75.2
Medical personnel in hospitals	1,811 of that 991 are specialists
Medical personnel	9,150

Data source: Federal/state office of data processing and statistics, NRW, 2003

Doctors with specialty in city districts

It is worth to mention that in 1998 there were 77,000 physicians working in NRW of which there were 4,779 (6.2%) who had non-German nationality. 37.4% of those work in hospitals, 29.5% as agency doctors and 33.1% in special fields. These non-German physicians come mainly from Europe, such as the Netherlands, Belgium, Bulgaria, Poland and Yugoslavia. Others come from Asia, Iran, Turkey, Syria, Afghanistan, Africa and America[335]. In Cologne, there are 13 Arab doctors coming from Syria, Iraq, Palestine, and Egypt[336]. Table 25 shows the number of doctors in the city of Cologne according to specialty and city area and number of pharmacies.

Table 25. Number of physicians by specialty and number of pharmacies according to city district in Cologne

City area	GP	Optician	Gynecolo-gist	ENT	Internist	Pediatrician	Orthopedist	All branches	Dentist	Pharmacist
Innenstadt	100	23	46	18	81	12	26	545	186	54
Rodenkirchen	43	6	13	6	22	8	6	173	69	30
Lindenthal	75	16	22	10	48	13	14	327	109	45
Ehrenfeld	46	5	11	4	23	5	6	126	47	26
Nippes	51	4	17	6	27	9	6	146	50	28
Chorweiler	27	2	10	4	15	7	4	85	27	13
Porz	37	7	11	5	23	7	7	133	48	22
Kalk	45	7	12	5	25	16	8	155	57	28
Mülheim	54	9	18	9	40	9	11	195	75	34
Total Cologne	478	79	160	67	304	86	88	1,885	668	280

Data source: "The White Book"; Office for town planning and statistics, Cologne. Stand 2003/2004

General hospitals in Cologne

There are 18 hospitals in Cologne. The number of set-up beds in hospitals is 25,801 and the number of set up beds in rehabilitation institutions is 3,304. Table 26 presents detailed data about hospitals.

Table 26. Hospital related data by type: number of hospitals, beds, patient admission and discharge, days of care and medical personnel

Characteristics	Total general hospitals	Of which	
		Public hospitals	Other general hospitals
Number of hospitals	18	4	14
Actual operating beds	7212	2968	4244
Patient admission	225565	91130	134 435
Patient discharge	221 893	89 704	132 189
Days of care	1 978 805	815 672	1 163 133
Average bed occupation/utilization in %	75.2	75.3	75.1
Doctor personnel	1811	1057	754
Of which			
Specialist doctors	991	505	486
Medical personnel	9150	4706	4444
Of which			
Nurses	5255	2381	2874
Medical technicians	2392	1603	789
Functional duties	1503	722	781
Other personnel	2783	1621	1162
Of which			
Accounting/Economic personnel	1166	688	478
Administrative personnel	896	449	447

Data source: Health office, Office for town planning and statistics, Cologne, 2003

Morbidity

This section includes information about the causes of death by age groups and causes of death among women.

Table 27 shows the causes of death with age groups, and shows that diseases of circulation form the highest percentage among the causes of death. Table 28 presents the number of female deaths according to cause and age groups. Circulatory system diseases and neoplasm form the two highest causes of death among females.

Table 27. Number and percentage of deaths according to ICD-10 and age groups

Death cause according to ICD-10	Number	% of total death	In age from…. till under ….. years			
			<40	40-60	60-80	80 and older
Infectious diseases	78	0.8	7	14	44	13
Neoplasm	2,163	22.6	41	337	1,239	546
Blood diseases	9	0.1	3	2	1	3
Nutrition and material change diseases	123	1.3	2	14	63	44
Of which Diabetes mellitus	104	1.1		11	54	39
Psychiatric and behavioral diseases of the nervous system	310	3.2	50	71	111	78
Diseases of the circulation system	3,783	39.5	35	182	1,318	2,248
Among them/ of which						
Acute heart infarction	575	6	6	41	278	250
Other ischemic heart diseases	663	6.9	7	28	279	349
Brain vessel diseases	791	8.3	7	31	264	489
Respiratory system diseases	700	7.3	4	29	294	373
Digestive system diseases	485	5.1	11	90	203	181
Of which liver cirrhosis	223	2.3	7	78	111	27
Diseases of kidneys, urinary system and genital organs	97	1	-	1	37	59
Diseases of newborns and malformation/deformity	30	0.3	27	1	2	-
Accidents	46	0.5	10	8	18	10
Of which car accidents	23	0.2	9	5	7	2
Self mutilation	132	1.4	41	39	45	7
Homicide	4	0	1	2	1	-
Other causes of death	415	4.3	18	50	138	209
Unknown causes	1,201	19.1	56	165	506	474
Total	9,576	100	306	1,005	4,020	4,245

Data source: Office of health, Office for town planning and statistics, Cologne, 2003

Concerning the morbidity and mortality rates among migrants in the city of Cologne, different sections of the health office were contacted in order to get data on this regard. It was reported that when health data are collected, they are not sorted according to citizenship or nationality.

Table 28. Number and percentage of female deaths according to ICD-10 and age groups

Causes of death according to ICD-10	Total	In age from…. till under…years			
		%	Under 40	40-60	60-80	80 and older
Infectious diseases	33		2	7	15	9
Neoplasm	1,023	10.7	20	178	492	333
Blood diseases	5		1	1	1	2
Nutrition and material change diseases	73	0.8	1	4	33	35
Of which Diabetes mellitus	62		-	3	29	30
Diseases of the nervous system	124	1.3	13	23	39	49
Diseases of the circulation system	2,200	23.0	16	64	540	1,580
Among them/ of which						
Acute heart infarction	245		1	9	88	147

Other ischemic heart diseases	306		3	7	85	211
Brain vessel diseases	500		3	13	132	352
Respiratory system diseases	351	3.7	2	11	119	219
Digestive system diseases	251	2.6	4	28	86	133
Of which liver cirrhosis	94		3	26	48	17
Diseases of kidneys, urinary system and genital organs	65		-	-	20	45
Diseases of newborns and malformation/deformity	18		16	1	1	-
Accidents	21	0.2	3	3	9	6
Of which car accidents	7		3	2	1	1
Self mutilation	36	0.4	11	7	15	3
Homicide	1		-	-	1	-
Other causes of death	256		10	12	65	169
No statement of death cause	632	10.5	16	63	212	341
Total	5,089		115	402	1,648	2,924

Data source: Office of health, Office of town planning and statistics, Cologne, 2003

Infant mortality rate (IMR)

In Germany as a whole, the infant mortality rate among migrants is 5.8/1000 live births in 1998 compared to 4.5/1000 among Germans[337] and the latest data reported 3.62 deaths/1000 live births (2001).

It is known that in the NRW as well as in Germany the infant mortality rate is higher among the migrant population in the 1990s (e.g. 7.2 vs. 5.2 per 1000 for Germany in 1993)[338]. Reasons for this increased rate could be related to increased rates of very young pregnant mothers in migrant population (e.g. 11% Turkish mothers between 15 and 20 years vs. 3.3% German mothers in the same age groups). Underweight children at time of birth (e.g. 12% of male and 10.8% of female newborns of mothers from former Yugoslavia vs. 8.6 and 8.3 of German mothers), and unfavorable patterns of early check-ups during pregnancy (up to 20% lower check-up rates in migrant women than in German mothers, who had 92% check-up rate up to the 13th week of pregnancy). These results are not homogeneous over the migrant groups but reveal different focal points in different subgroups. There is also the problem of different classification of nationality in different statistical sources. For example, Turks are included in the group of countries from the Middle East and the people from former Yugoslavia are added to the Mediterranean countries[339].

The same literature points out that during the 1988-1993 period, the infant mortality rate slightly decreased in all of Germany, i.e., in both Germans and migrants, but the basic difference between the two remained the same.

Live births and infant mortality

Data on live births were only available on the whole region of NRW for the year 1997. Infant mortality rate among migrants is higher by about 1.3 to 2.2/1000 live births in comparison to the German rates. As shown in Table 29, live births and infant deaths are highest among the Turkish migrants.

Table 29. Number of live births and dead infants in NRW according to nationality

Nationality	Live births	Infant deaths
German	157,740	821
Greece, Italy, Portugal, and Spain	3,636	16
Remaining EU (including Finland, Sweden and Austria)	657	4
Former Yugoslavia	4,961	22
Turkey	16 427	129
Other countries	6,965	50

Data source: Scientific Institute of the German Medical Association (WIAD gem.e.V.), 1999

Maternal mortality rate (MMR)

This information is available for the whole country only. In Germany, the maternal mortality rate for migrants has decreased from 9/100,000 in 1995 to 8.5/100,000 in 1996 and to 5.6/100,000 in 1997, while for the Germans it increased from 4.8 in 1995 to 6.1/100,000 in the years 1996 and 1997[340].

Disabled persons

In 1997, the rate of severely disabled persons in the German population was more than 100/1000 inhabitants, while the rates in the migrant subgroups was half as high as the German rates. This could be related to the healthy migrant effect, and lower use of the health services among the migrants or the lower registration[341]. Moreover, migrants are more often registered as severely disabled for occupational reasons or job related diseases than Germans[342]. Further analyses reveal that half of the occupational diseases among the migrants were found in the Turkish population (40.4/1000), which at the same time comprised only a third of the whole migrant population. As for other nationalities: former

Yugoslavia (13.3%), Italy (10.4%), Greece (7.9%), Holland (4.1%), Spain (3.6%), Asia (3.3%), Morocco (2.5%), Portugal (2.2%), and other countries (12.4%).

Table 30 shows the number of handicapped people in the city of Cologne according to their age group and gender. The highest number of handicapped is in the age group of 65 and older. Table 31 shows the number of handicapped according type of handicap. The number of handicapped due to impairment of internal organs is the highest.

Table 30. Number of handicapped persons according to gender and age groups in Cologne

Age groups	Males	Females	Total
Total	4, 585	40,062	80,647
Under 4	128	108	236
4-6	120	93	213
6-15	604	463	1,067
15-18	206	155	361
18-25	521	382	903
25-35	1,386	1,093	2,479
35-45	2,846	2,406	5,252
45-55	4,165	4,035	8,200
55-60	3,938	3,131	7,096
60-62	2,622	1,801	4,423
62-65	3,921	2,742	6,663
65 and older	20,128	23,653	43,781

Data source: Federal/state data processing and statistics department, NRW, 2002

Table 31. Number of handicapped persons according to type of handicap in Cologne

Type of handicap	Number of handicapped
Total	80,647
Loss or partial loss of limbs	621
Function restriction of limbs	5,618
Function restriction of the spinal column, trunk or thorax	13,520
Blindness or sight impairment	3,666
Speech disturbance, deafness or difficulty in hearing, balance disturbance	2,932
Loss of breast or breasts, distortion....etc.	2,184
Impairment of function of the inner organs or organ system	18,417
Paralysis, cerebral disturbance, spiritual or mind disturbance, addiction	9,607
Other reasons	24,082

Data source: Federal/state data processing and statistics department, NRW, 2002

Birth rate and death rate

The birth rate in Germany is 8.71 births/1000 population (year 2002 estimates). Death rate is 10.20 deaths/1000 population (year 2002 estimates)[343]. In Cologne, the number of newborns was 9,615 and the number of deceased was 9,711 in the year 2002.

Total fertility rate

In Germany the total fertility rate is 1.4 children born/woman (2003 estimates)[344].

As for other health indicators, they were mentioned on the level of NRW in the chapter on migration.

Health insurance

In Germany, about 88% of the population participates in one of the obligatory health insurance system Sickness Health Funds (SHF) 'Krankenkassen'. This is linked to employment or to the family where at least one person is legally employed, studying or temporarily unemployed. Others have access to private health insurance. 74% are mandatory members and their dependants while 14% are voluntary members and their dependants. 9% of the population are covered by private health insurance, 2% by free governmental health care (i.e. police officers, soldiers and those doing the civil alternative to military service) while only 0.1% are not insured[345]. For asylum seekers, refugees, homeless and long-term unemployed, the Social Welfare system covers the cost of the health insurance. In the new law starting 2004, patients have to pay 10 euros when attending a GP clinic for treatment covering a three-month period[346].

Sickness funds are divided into seven different groups:

- 17 regional funds known as Allgemine Ortskrankenkassen (AOK) - their federal association is based in Bonn.
- 13 substitute funds known as Ersatzkassen-Siegburg.
- 359 company-based funds known as Betriebskrankenkassen (BKK)-Essen.
- 42 guild funds or Innungskrankenkassen (IKK)-Bergish-Gladbach.
- 20 farmers' funds or Landwirtschaftliche Krankenkassen (LKK)-Kassel.
- 1 miners fund known as Bundesknappschaft-Bochum.
- 1 sailors fund or Sea-Krankenkasse-Hamburg.
- 52 private insurer companies.

All funds have non-profit status and are based on the principle of self government elected by the membership[347]. Insured persons aged 35 years or above can have a health check-

up carried out every two years, primarily in order to detect cardiovascular diseases, kidney diseases and diabetes[348].

8.4.4 Results from the open group meeting discussion

Based on the information collected from the focus groups, the key informant interviews and the COPC team, a list of gathered problems was formulated. In this study a qualitative method was used to prioritize the problems; this depended on the views and the feedback of the clients/women, key informants and the COPC team. Thus, an open group discussion meeting (n=43) was held at the center with the COPC team and active members from the Arab community in the city of Cologne on the 30th of September 2004. In all three kinds of interviews, i.e. the focus groups, the key informants' interviews and the public meeting, the problem that was ranked to be of highest priority was ***high psychological distress*** among women (frequency 35, 9 and 35 respectively). This stress was seen not only to be the cause for psychological complaints, but also for physical illness. The reason why a quantitative method was not used is that there are no separate epidemiological data on diseases or health indicators concerning the Arab migrant population. This made it very difficult to get information on the size and the seriousness of the different health problems that were mentioned in the focus groups and key informant interviews, and in turn selecting one problem for the intervention. This confirms previous research that has pointed out that limited information is available on the possible epidemiological and clinical differences between people of German origin and other ethnic or national groups in Germany[349].

8.4.5 Results from the questionnaire

This section presents description about women who completed the questionnaire, their satisfaction with health, and their psychological status.

Descriptive statistics about participating women in the questionnaire (N=116)

This section provides descriptive and inferential statistics including associational, differential and predictive statistics. The descriptive part provides demographic

information, health status and satisfaction with health care, and information on psychological status.

A. Demographic characteristic of the sample

- Age: The mean age for women was 32.30 years (range: 18 to 67). Most of the women were in the age group of 26 to 30 years old (n=28, 24.1%), followed by the group 20 years and below (n=21, 18.1%). Figure 15 presents age groups with frequency.

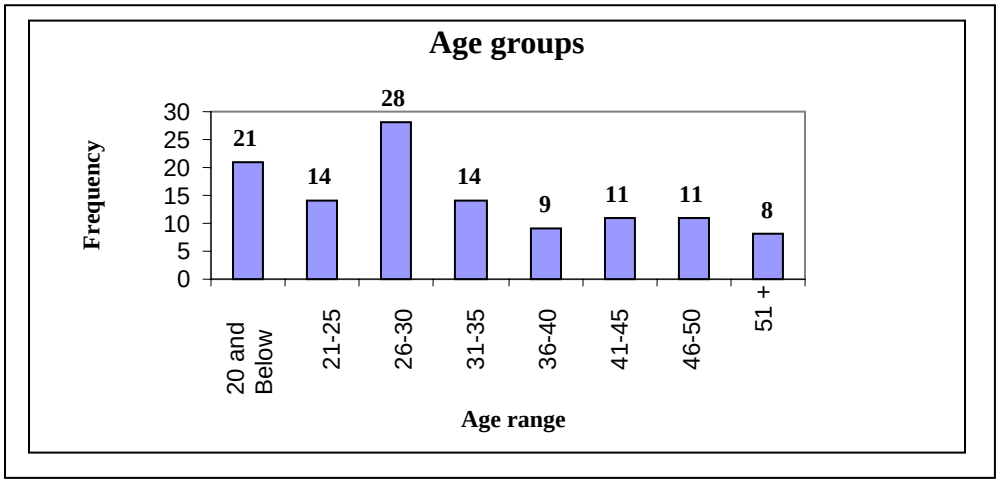


Figure 15. Distribution of women's age groups from sample of the questionnaire (N=116)

- Place of birth: most of the women in this sample were born in Morocco (n=36, 31%). Others came from 12 Arab different countries. There were other women who were born in Germany, France and Spain, but who did not have the German nationality, and thus were considered migrants and were included in the study. Figure 16 presents those countries with frequency and percentages.

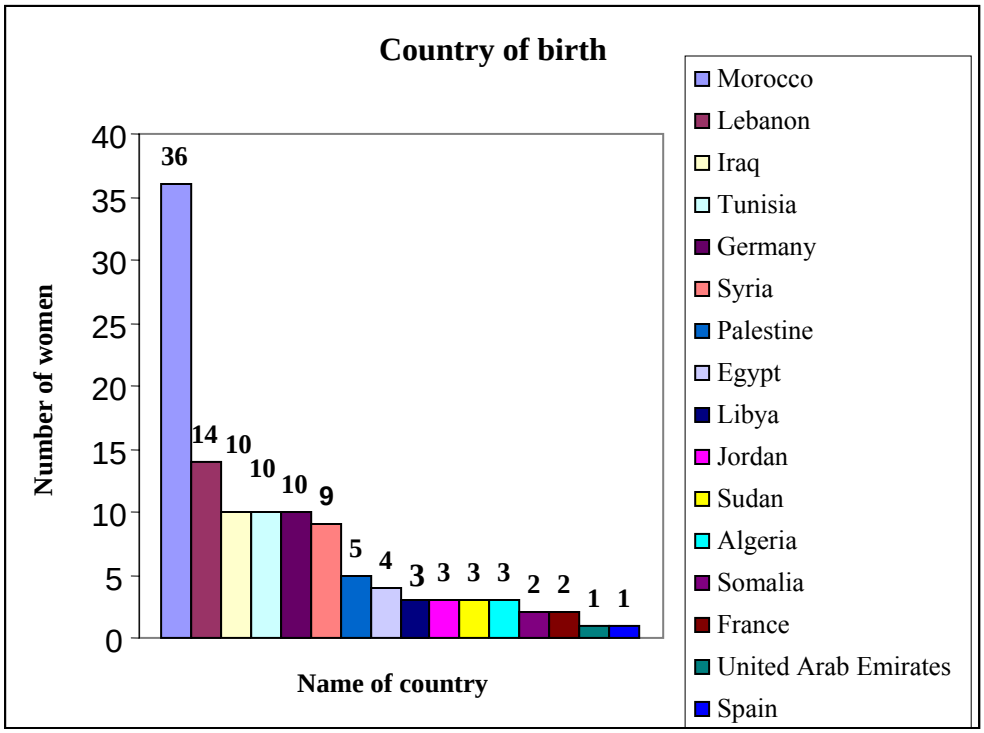


Figure 16. Distribution of women according to country of birth

Countries were regrouped in three groups: Europe (Germany, France and Spain), Middle East (Lebanon, Iraq, Syria, Palestine, Jordan, Egypt and the United Arab Emirates), and North Africa (Tunisia, Morocco, Algeria, Libya, Somalia and Sudan). See figure 17.

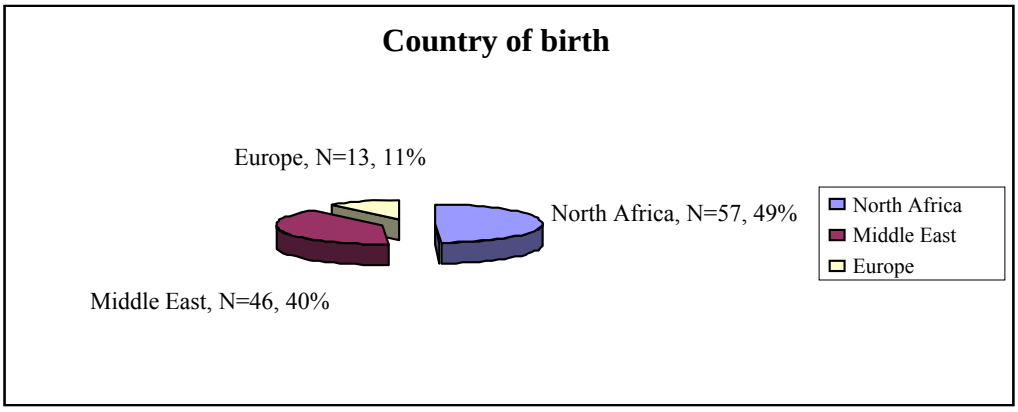


Figure 17. Number and percentage of women according to country of birth group: North Africa, Middle East and Europe

- Level of education: in this part, the classification used in the Arab countries' educational systems was used. Most women had a secondary degree which is between the 11th and the 13th class (n=35, 30.2%), followed by the group with preparatory level (n=30, 25.9%). Figure 18 shows the educational levels with frequency and percentage.

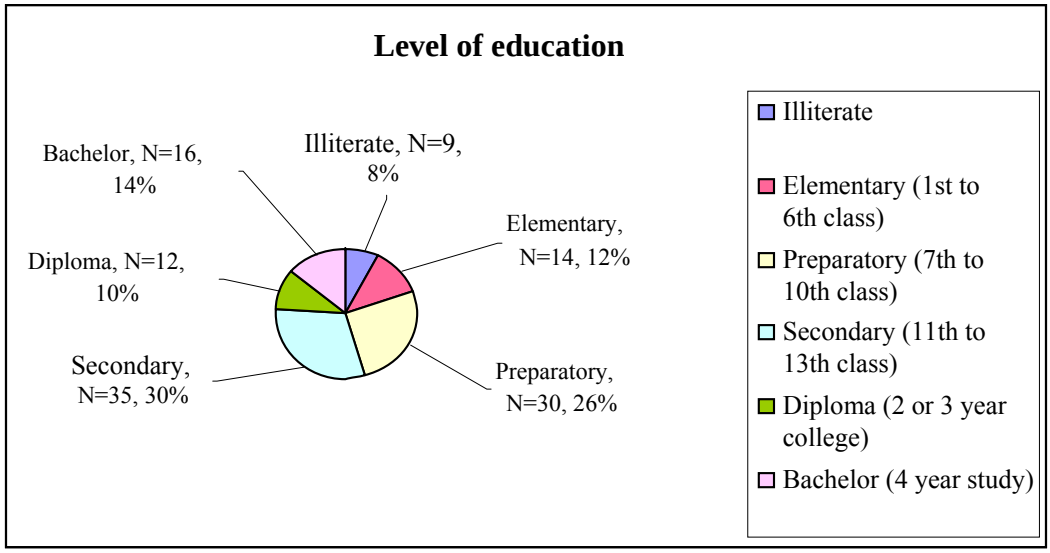


Figure 18. Number and percentage of women according to level of education

- Marital status: the majority of the sample was married, 61.2% (n=71), followed by the single group 30.2% (n=35). There were 9 divorced women and 1 widow as presented in figure 19.

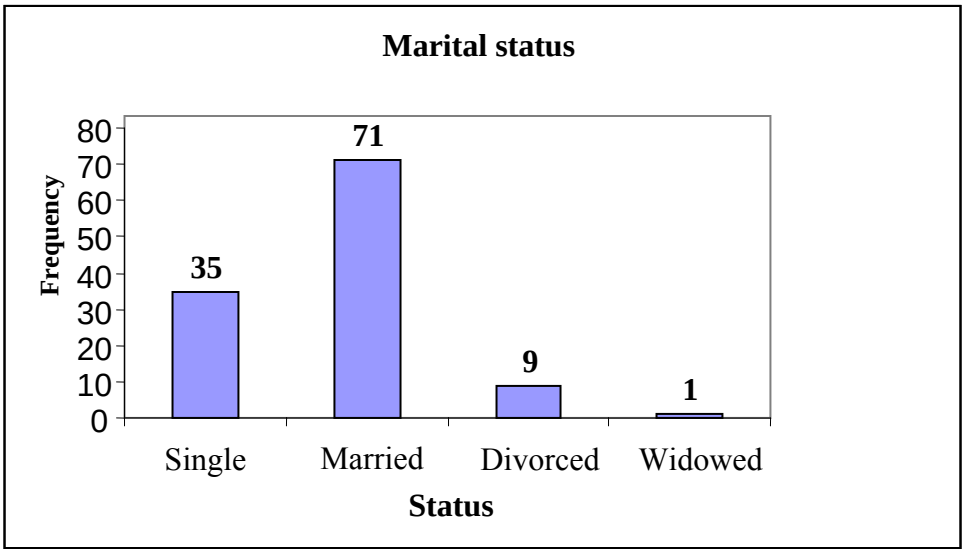


Figure 19. Distribution of women according to marital status

- Number of children: number of children ranged between 0 and 10. None of the single women had children (n=35), and the number of women with children was 70 (without counting married women with no children "n=11"). The mean number of children was 2.02. Most of the women had between 1 and 5 children (n=60). Table 32 shows the frequency and percentage of the number of children.

Table 32. Frequency and percentage of the number of children that women had

Number of children	Frequency	Percentage
0	11	13.5
1	13	16.0
2	15	18.5
3	12	14.8
4	14	17.3
5	6	7.4
6	4	5
7	5	6.2
10	1	1.3
Total	81	100

- Length of stay in Germany: this ranged between 3 months and 36 years. The mean length of stay was 14.63 years. Figure 20 shows the range and frequency.

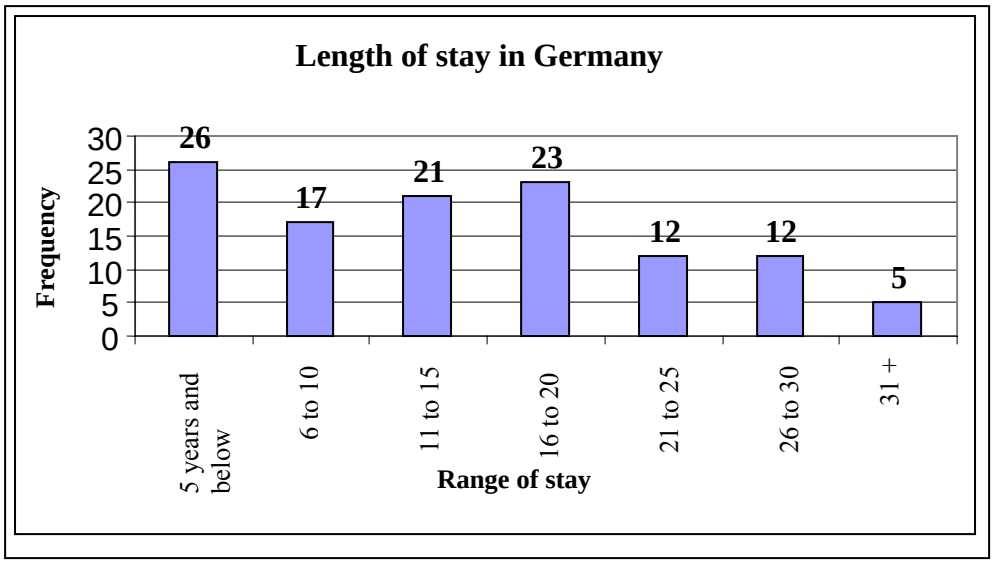


Figure 20. Distribution of women according to the length of stay in Germany in year groups

- Type of work: 55.2% (n=64) of the sample was housewives and 27.6% (n=32) was students. Among those who worked outside the house (n=19, 16.4%), jobs varied from care takers in kindergartens, shop assistants, cleaners, assistants in bakeries or hair dressers. Figure 21 shows the type of work with frequency and percentage.

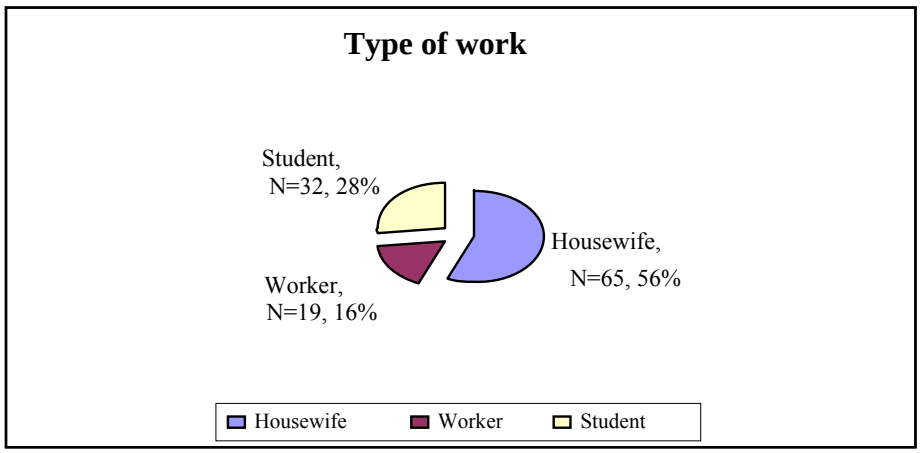


Figure 21. Number and percentage of women according to their type of work

B. Health status of women and satisfaction with health care

This section had five domains: having illness since migrating to Germany, suffering from any illness the day of answering the questionnaire, performing physical exercise, satisfaction with health care, and feeling of discrimination while seeking medical care.

These items were formulated based on the results and analysis of the focus groups and key informant interviews.

- Having illness since migrating to Germany: 96.6% (n=112) of women responded with "yes" they got ill since they migrated to Germany and that they sought medical care. Only 4 women (3.4%) reported not becoming ill since they migrated to Germany.
- Suffering from illness the day of answering the quetionnaire: 33.6% (n=39) of women reported that they were ill at the time of completing the questionnaire. Diseases mentioned included flue, diabetes mellitus, hypertension, back and neck pain, and hypercholesteremia. Seventy seven women (66.4%) reported that they were not ill at the time of completing the questionnaire.
- Performing physical exercise that lasts at least 20 minutes during the week: the answers received ranged between 0 and 3 times. Most women do not perform any kind of exercise (n= 90, 77.6%). Figure 22 shows the number of performed exercise with frequency and percentage.

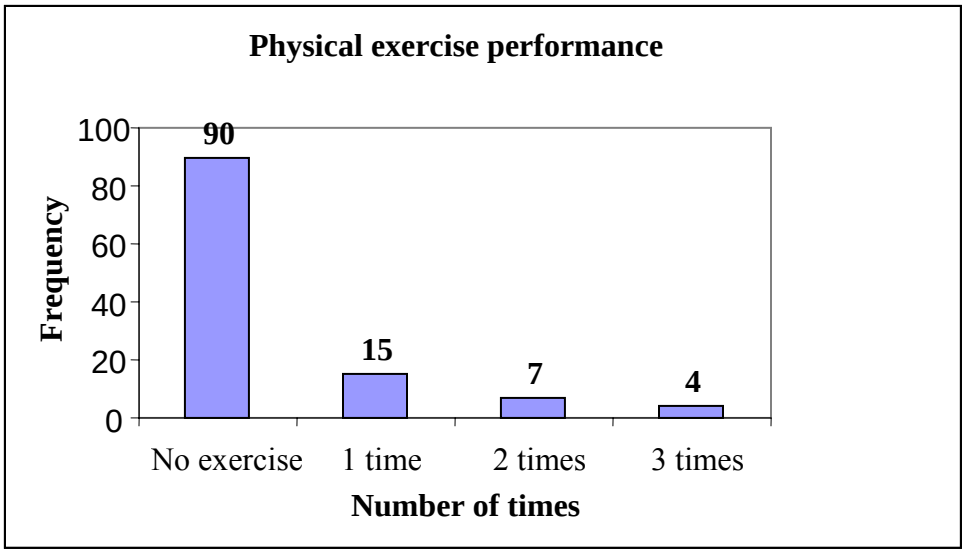


Figure 22. Distribution of women according to the number of times of physical exercise they perform that lasts for at least 20 minutes during the week

- Level of satisfaction with health care in Germany: women were asked to range their satisfaction with health care on a 5 point Likert scale. Table 33 and figure 23 show that 53.5% (n=62) of women were satisfied with care (satisfied and very

satisfied), and 28.4% (n=33) women were little satisfied, and 18.1% (n=21) were either unsatisfied or completely unsatisfied. Few women noted that their dissatisfaction was because they themselves, one or more of their family members, or even acquaintance were misdiagnosed, received incorrect prescription for medication, or had the feeling of being treated differently (discriminated).

Table 33. Frequency and percentage of women's level of satisfaction with health care in Germany

Level of satisfaction	Frequency	Valid %	Cumulative %
Completely unsatisfied	3	2.6	2.6
Unsatisfied	18	15.4	18.1
Little satisfied	33	28.4	46.6
Satisfied	45	38.8	85.3
Very satisfied	17	14.7	100.0
Total	116	100	

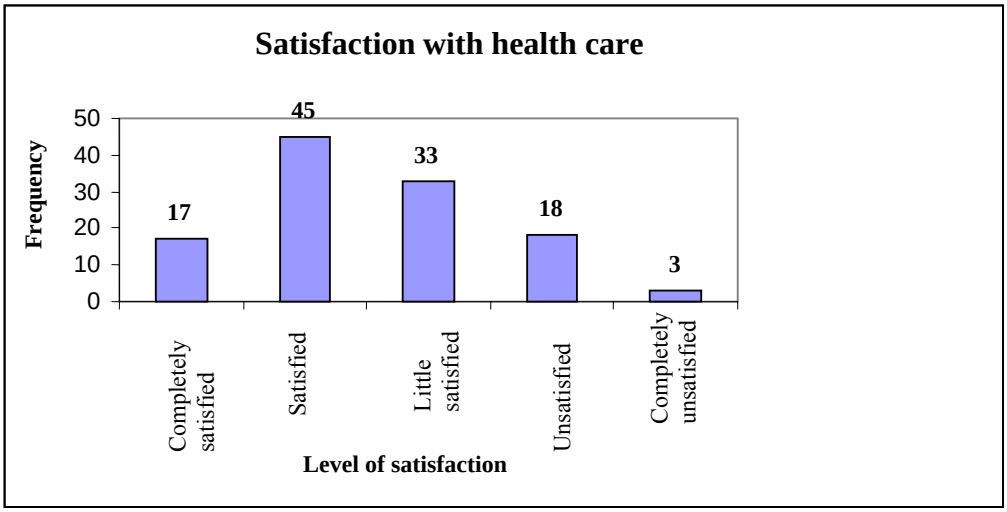


Figure 23. Distribution of women according to the level of satisfaction from health care in Germany

- Feeling of being treated differently by health care staff in comparison to other non-migrant women: table 34 and figure 24 show that 58.6% (n=68) felt they were treated differently ranging from "very much" to "very little" on a five point Likert scale.

Table 34. Frequency and percentage of women according to level of difference they feel from health care staff when they seek health care

Level of difference	Frequency	Valid %	Cumulative %
Very much	11	9.5	9.5
Much	22	19	28.4
Little	24	20.7	49.1
Very little	11	9.5	58.6
No difference	48	41.4	100.0
Total	116	100	

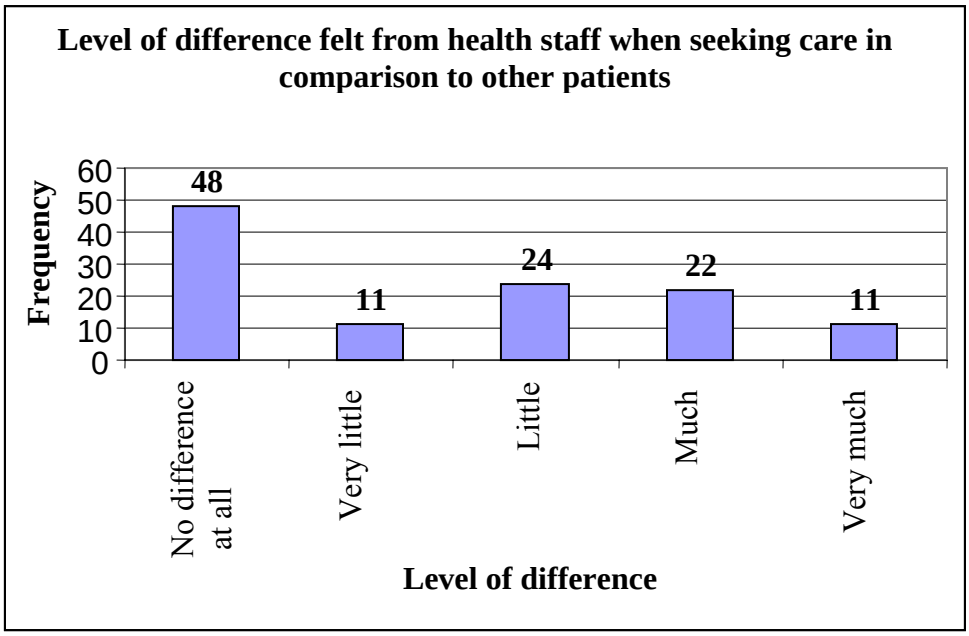


Figure 24. Distribution of women according to the level difference they feel from health staff when seeking health care

C. Psychological status

This section of the questionnaire collected information on psychological status, main stressors women face in Germany, social support and its sources, reaction to stress, visiting home country and its effect on psychological status, activities done in free time (to get an insight for the intervention activities), and finally SCL-90-R questionnaire items.

- Is psychological status affected by being a migrant: 75.9% (n=88) of the sample said yes and 24.1% (n=28) said no as presented in figure 25.

  Some of the women commented that it is not being a migrant but rather being a Muslim in a non-Muslim atmosphere that negatively affects their psychological status.

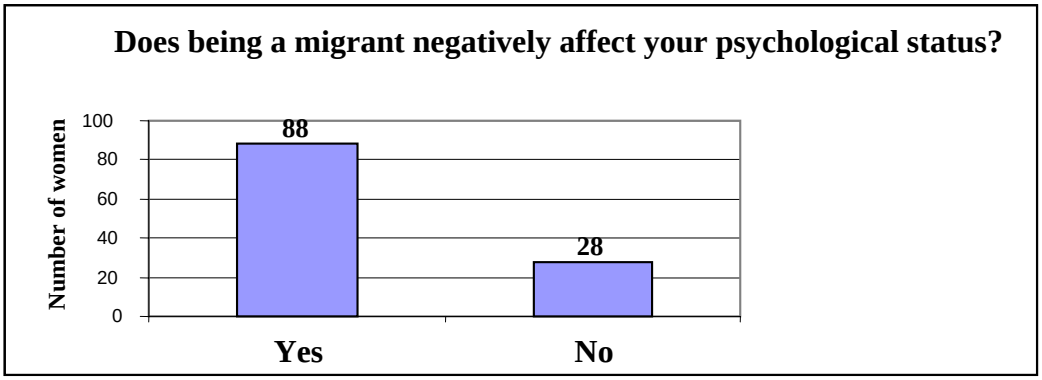


Figure 25. Distribution of women according to negative psychological status they had being migrants

- Main stressors that negatively affect the psychological status of women: for this question, women could choose more than one answer and they could add other responses that were not included in the given list. Feeling lonely was the major stressor for half of the women (50%, frequency=58). Figure 26 shows the stressors with frequencies.

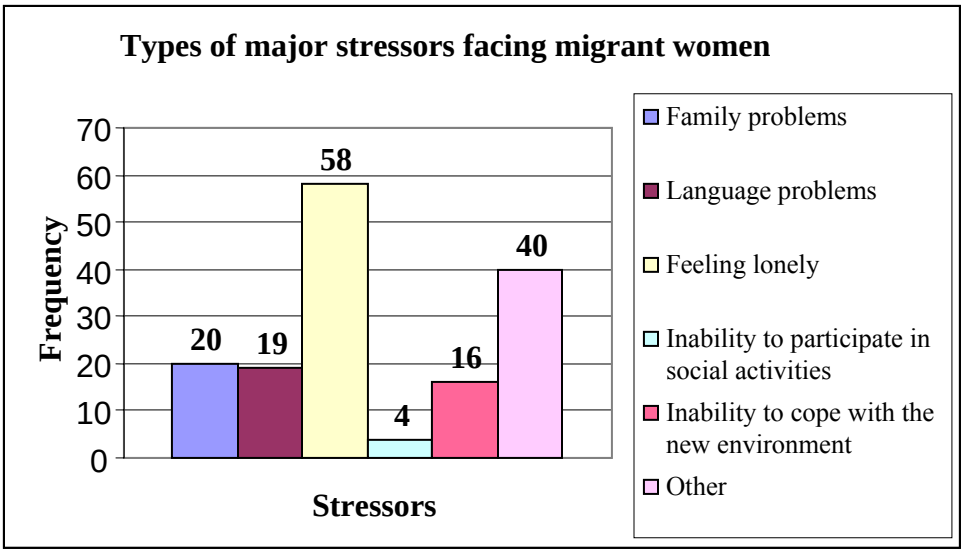


Figure 26. Distribution of different types of stressors that negatively affect women's psychological status in Germany

The open answers to ***"others"*** were grouped into personal, social, cultural, ethical, and religious for easier analysis. These were as follows with their frequencies:

- Personal (frequency=5): such as having health problems that prevent pregnancy and to have children, being divorced, and dissatisfaction with the decision of migrating to Germany.
- Social (frequency=5): such as the weak social relationships between families and network in comparison to the home country, and high financial requirements of life.
- Cultural (frequency=11): feeling a different atmosphere due to different cultures, missing home country atmosphere, instability and feeling confused, worrisome about raising children in a different 'open' culture with different behaviors than in the Muslim countries, and constant feeling of being foreign.
- Ethical (frequency=13): discrimination against foreigners in general and against Muslims in specific. This was described in terms, such as racism, prejudice, disrespect and intolerance, and complicated country system.
- Religious (frequency=6): inability to practice all religious rights, such as the issue of prohibiting the head scarf in some states, inability to find a job due to the scarf, not feeling the religious holidays or their celebrations.

o Social support: 88.8% of sample (n=103) reported asking for support from someone when they are under psychological stress and 11.2% (n=13) mentioned that they do not ask for any support.

As for the number of persons who provide support. This ranged from 0 to 4 persons. Table 35 and figure 27 show the frequencies and percentages.

Table 35. Number of persons providing support when being under stress by frequency and percentage as reported by women

Number of persons providing support	Frequency	%
0	13	11.2
1	30	25.9
2	42	36.2
3	12	10.3
4	18	15.5
Total	116	100.0

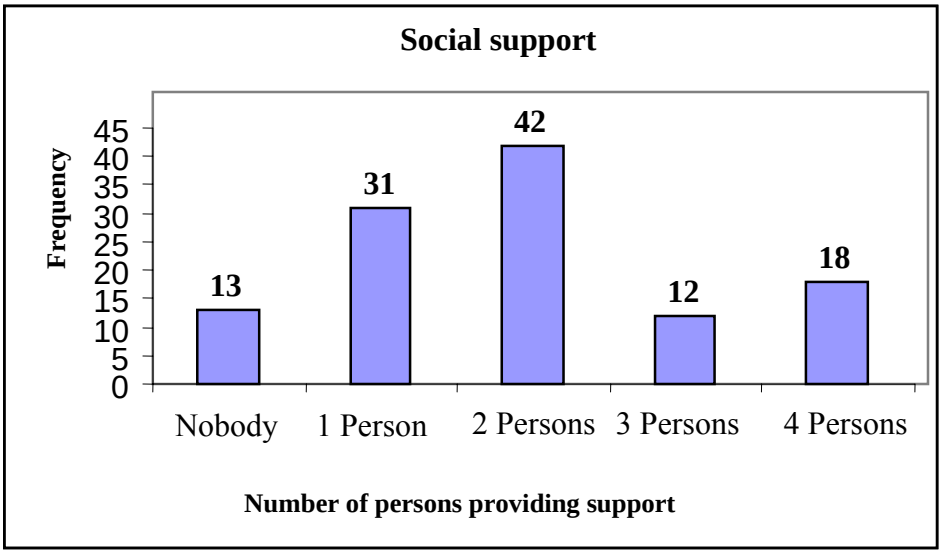


Figure 27. Distribution of women according to number of persons who provide social support in case of being under stress

A number of source for social support were mentioned. Women could choose more than one answer. Family members and friends were the most frequent source of support in case of being under stress. None of the women reported seeking help from psychological counseling. Table 36 and figure 28 show the sources with frequencies and percentages.

Table 36. Types of support sources by frequency and percentage as reported by women

Source of support	Frequency	%
Family members	69	59.5
Friends	42	36.2
Physician	2	1.7
Psychological counseling	0	0.0
Others (God/Allah)	3	2.6

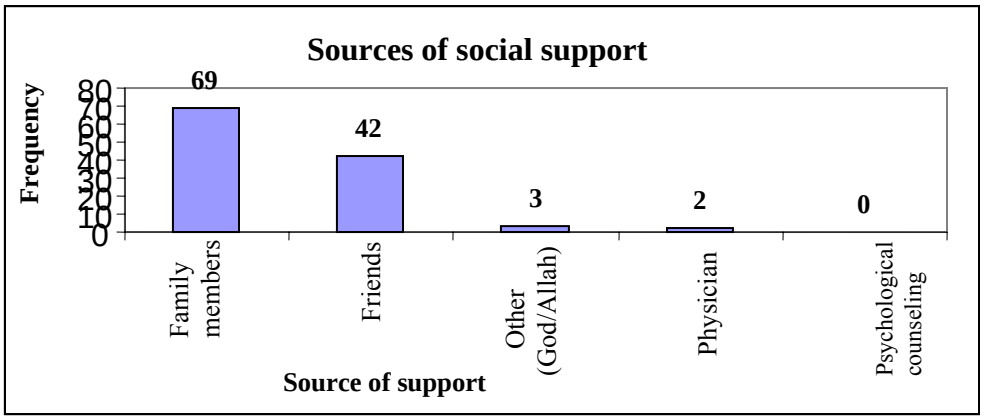


Figure 28. Distribution of women according to social support sources

- Reaction to stress or dealing with stress: women were asked what they do when they are under stress and women could choose more than one answer. Most of the women responded that they cry in case of stress (frequency 78, 67.2%); followed by talking to others (frequency 27, 23.3%). Women could also mention other reactions than what was in the provided list. Figure 29 shows the reactions with frequencies.

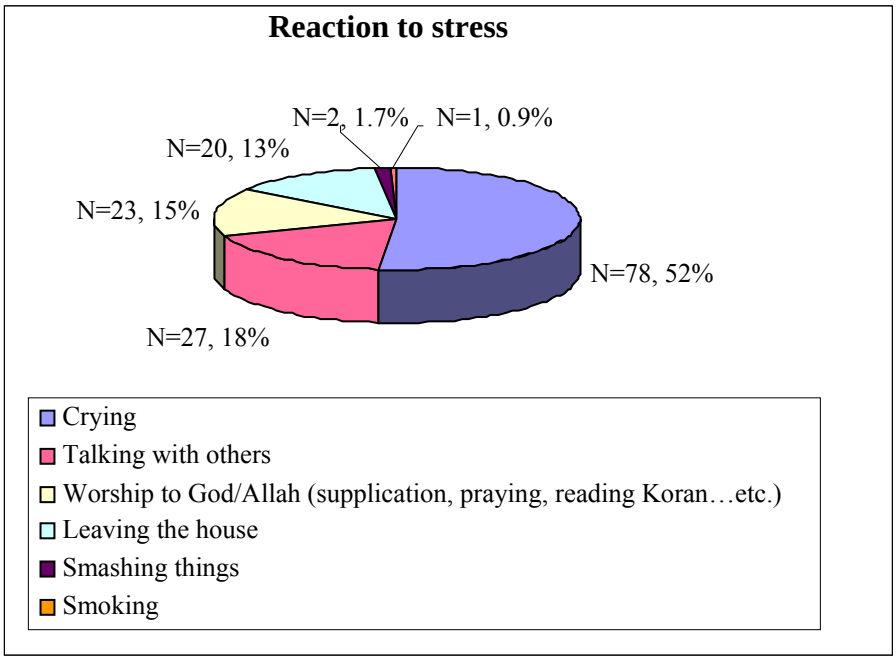


Figure 29. Number and percentage of women according to the type of reaction to stressful situations

The 47 open answers given to "others" as ways of dealing with stress were grouped as the following:

- Isolation or disconnection from others (frequency=20): this included sitting alone and keeping silent.
- Thinking (frequency=16): this included deep thinking and repeated thoughts of the cause of stress, distracting the topic in mind, writing diaries or writing about the cause of stress, or reading to distract thoughts.
- Physical activity (frequency=11) : this included making the house work and arranging it, driving, walking, screaming, eating and drinking to get the stress out.

- Psychological status and nutrition: women were asked if their nutrition is affected when they are under stress. 98.3% of the sample (n=114) reported that their nutrition is affected. Answers varied from excessive eating to reduced eating, but observation showed that women reported excessive eating and the observation of the researcher showed that women tend to be overweight, especially the older ones. 1.7% (n=2) reported no effect of stress on their nutritional habits.
- Visiting home country and its effect on psychology: 86.2% of women (n=100) visit their home countries during holidays, 12.1% (n=14) reported not visiting their countries due to war circumstances and most of these were from Iraq. There were 2 respondents who did not answer this question.
- Effect of visit on psychological status: 75% (n=87) of women who visited their countries reported a positive effect on their psychological status when visiting their home countries, while 11.2% (n=13) reported no effect on their psychology.
- Activities during free time: this question was asked to get an insight for the later step of intervention activities in the research and also to see how women cope with the atmosphere and environment in Germany. Women could choose more than one answer. Most of the women reported watching TV (frequency 81, 69.8%) and many women reported reading (frequency 72, 62.1%). Only one woman reported swimming. Figure 30 shows the activities with frequencies.

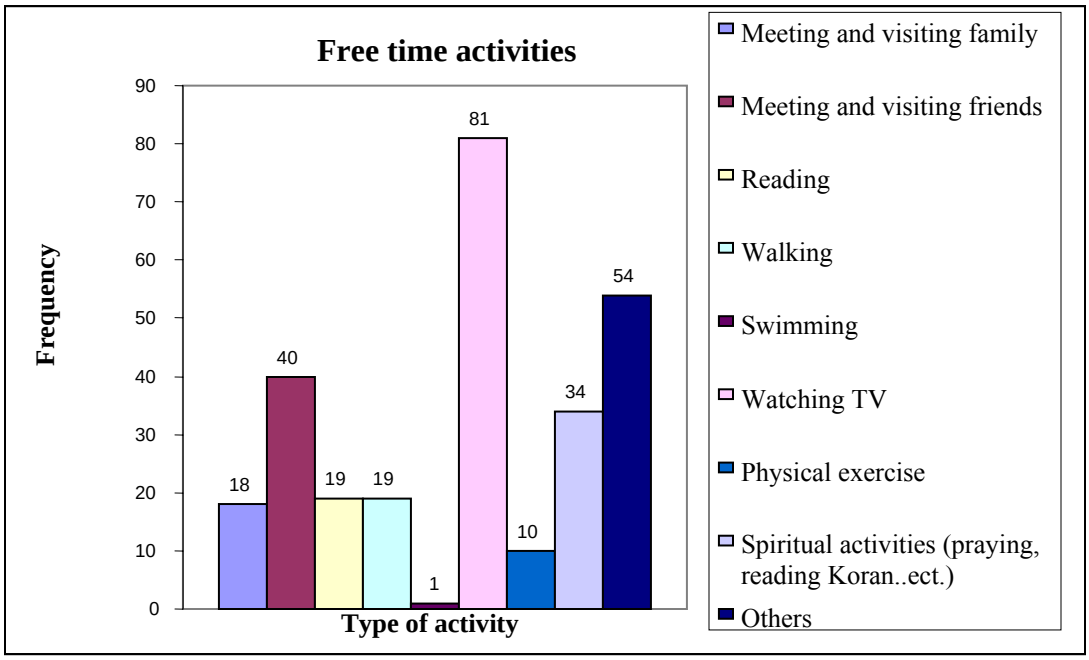


Figure 30. Distribution of women according to activities they perform in their free time

Answers to '**others**' were grouped as following:

- Socio-religious activities (frequency=24): these included meetings in religious occasions such as feasts, and helping in house work.
- Self development activities (frequency=17): these included attending courses such as hairdressing, German language, driving lessons, sewing and cloth design, art such as card design, educational lectures at BFmF, listening to educational cassettes and studying.
- Relaxation activities (frequency=20): these included drawing, shopping, gardening, listening to music, jogging, baking new recipes, knitting, changing house décor, and rest and sleep.

o SCL-90-R score results: these included the mean and the standard deviations of the nine sub-items and the three indices of the questionnaire as shown in table 37. The minimum score for all the items is 0 and the maximum is 4 except for PST for which the maximum score is 90.

Table 37. Means and standard deviations of Arab migrant women's SCL-90-R scores according to dimensions with minimum and maximum values (N=116)

SCL-90-R Symptom dimensions	Arab women in Cologne		Range of women's scores	
	Mean	Standard deviation	Minimum	Maximum
Somatization	1.26	0.77	.00	3.66
Interpersonal sensitivity	1.40	0.76	.00	3.33
Obsessive compulsive	0.36	0.34	.00	1.90
Depression	1.44	0.83	.00	3.69
Anxiety	0.69	0.67	.00	3.20
Hostility	0.37	0.48	.00	2.16
Phobic anxiety	0.38	0.59	.00	3.00
Paranoid ideation	0.33	0.49	.00	3.33
Psychoticism	0.20	0.34	.00	2.40
GSI	0.81	0.44	.04	2.41
PSDI	2.34	0.55	1.00	3.68
PST	30.27	13.1	3.00	78.00

Inferential statistics findings

This section presents the descriptive statistics about women, and results from differential, associational and complex statistical analyses.

A. Differential statistics

The hypothesis to be tested in this section was that stress scores of migrant women in this study are different than the normative sample scores as measured by SCL-90-R.

In order to compare the scores of women in this study, it was necessary to get the normative scores which are based on different studies carried out by the author of the instrument (Derogatis) in different age groups. Sample size for the normative studies exceeded 2,000 individuals. The sample size for the adult-non-patients was 974 with 494 males and 480 females. The mean age was 46. Other normative scores were available for adult psychiatric outpatients, adult psychiatric inpatients, and adolescent non-patients. For the purpose of this study, women's scores were compared to the adult non-patient group values.

In order to check how significant the difference of the mean scores of the Arab women on SCL-90-R from the normative sample scores was, one sample T-Test for the nine dimensions and the three indices was done respectively. In each of the tests, the mean of the each dimension from the normative sample was entered as the test value.

Table 38 compares the means and the standard deviations of the Arab women sample and the normative sample, and gives the T and P values for the Arab migrant women as well. Results show that there is a statistically significant difference between the Arab migrant women sample and the normative sample scores. The table shows that there was a higher statistically significant difference between the scores of Arab women and the normative sample scores on seven out of the 9 dimensions; these were somatization, interpersonal sensitivity, depression, anxiety, phobic anxiety, psychoticism ($p<.05$), GSI, PSDI and PST with a $p<0.01$ ($p<0.000$). Obsessive compulsive and paranoid ideation were not significantly different from the normative sample ($p= 0.42, 0.87$ respectively). The confidence interval for the difference between the means was as low as 0.01 and as large as 13.41 indicating that the difference could be as little as 0.01, which is not an important difference, but could be as large as 13.41 points.

Table 38. Difference between Arab women's SCL-90-R scores and the normative sample scores: results from One Sample T-Test with mean values, SD, T values, P values, and 95% CI

Dimension	Normative sample		Arab women in Cologne (n=116)				95% Confidence interval	
	Mean	Standard Deviation	Mean	Standard deviation	T value	P value Significance (2 tailed)	Lower value	Upper value
Somatization	0.36	0.42	1.26	0.77	12.555	0.000**	0.76	1.04
Interpersonal sensitivity	0.29	0.39	1.40	0.76	15.697	0.000**	0.97	1.25
Obsessive compulsive	0.39	0.45	0.36	0.34	-0.809	0.420	0.90	0.03
Depression	0.36	0.44	1.44	0.83	13.952	0.000**	0.92	1.23
Anxiety	0.30	0.37	0.69	0.67	6.328	0.000**	0.27	0.52
Hostility	0.30	0.40	0.37	0.48	1.694	0.043*	0.01	0.16
Phobic anxiety	0.13	0.31	0.38	0.59	2.106	0.000**	0.14	0.36
Paranoid ideation	0.34	0.44	0.33	0.49	-.152	0.87	0.09	0.08
Psychoticism	0.14	0.25	0.20	0.34	2.106	0.037*	0.04	0.13
GSI	0.31	0.31	0.81	0.44	12.231	0.000**	0.42	0.58
PSDI	1.32	0.42	2.34	0.55	19.876	0.000**	0.92	1.12
PST	19.29	15.48	30.27	13.1	8.975	0.000**	8.56	13.41
** p< 0.001 * p< 0.05								

Figure 31 presents the difference between the normative sample SCL mean values and the mean values of the Arab migrant women sample.

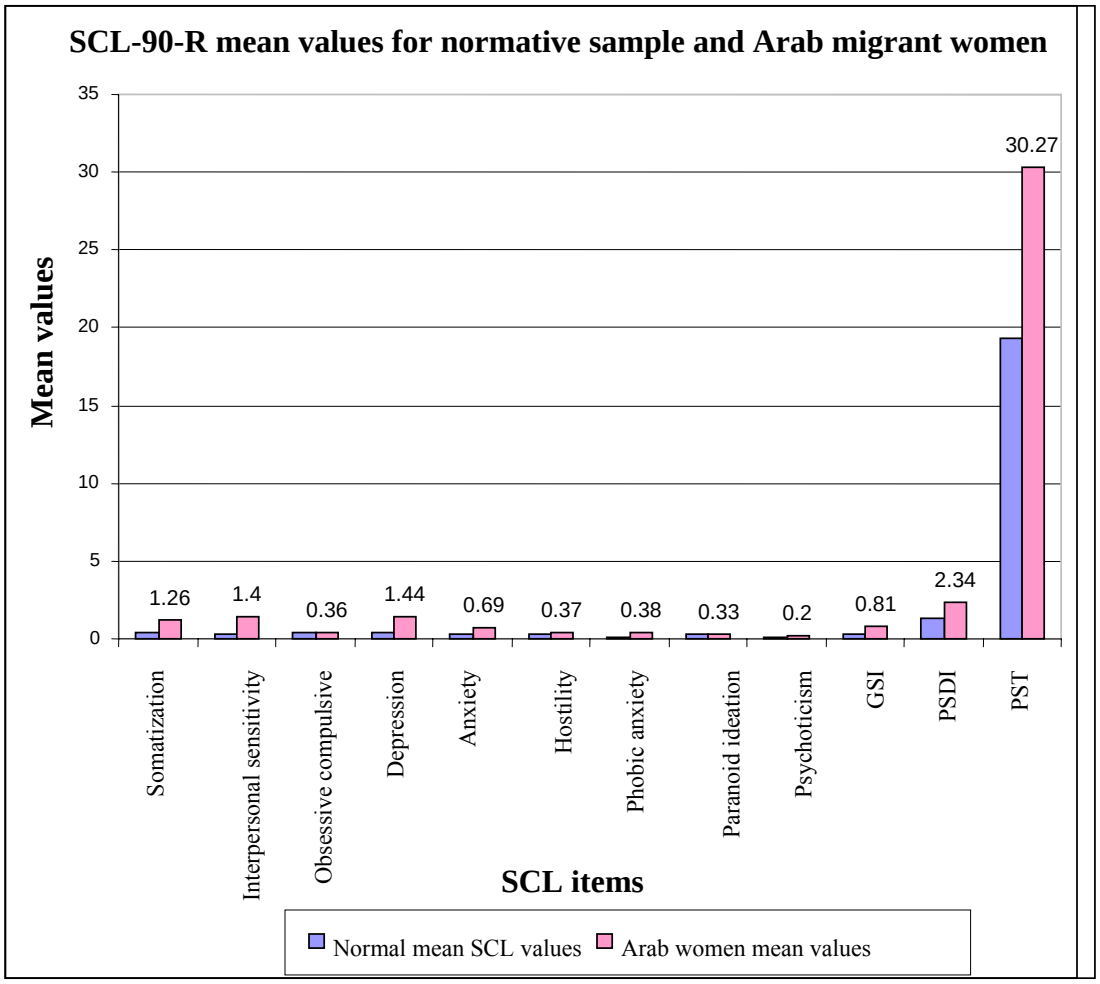


Figure 31. Distribution of the mean difference between Arab women's SCL scores and the normative sample scores

Results give evidence to reject the null hypothesis that there is no significant difference of this sample stress scores and the normative sample scores. The analysis revealed highly significant differences between the study sample scores and the normative sample scores.

B. Associational statistics

This part tested the hypothesis that there is an association between socio-demographic, health and migratory status variables and stress scores using bivariate or multivariate (multiple linear regression) analysis.

First: Bivariate analysis

1. Correlation of socio-demographic variables with the scores of SCL-90-R

For this part, either Pearson or Spearman was calculated depending on the variables entered for association relationship. For choosing Pearson to be the test of association, variables were checked to have a linear relationship using scatter plot and the data were checked for not having outliers.

Association between age and the scores of the SCL-90-R

To investigate if there is a statistically significant association between age and SCL scores, Pearson correlation was calculated for all the scores and age; it was only significant on two items: somatization and PSDI; on somatization it was r(114)=0.22, p=0.017 and on PSDI it was r(114)=0.281, p=.002. The direction of the correlation was positive, which means that the women who were older had higher scores on these two items; this is a small to medium effect according to Cohen 1988[350] sited in Khamis, 1998[351].

Age was also categorized into groups and when Spearman correlation was calculated with the scores of the SCL items, the same results emerged. The only significant results were on somatization and on PSDI scores. On somatization, spearman's rho was r(114)=0.218, p=0.01 and on PSDI it was r(114)=0.311, p=0.001.

In order to check which age group had higher scores on somatization and PSDI, a test to compare means was done using age groups. Results showed that the older the women are, the higher the mean scores on somatization and PSDI are. Table 39 shows the means for both somatization and PSDI for 10 year age groups.

Table 39. Mean score difference for somatization and PSDI SCL items by age group of women

Age group	N	Somatization	PSDI
		Mean	Mean
20 years and below	21	.88	1.95
21 to 30 years	42	1.28	2.35
31 to 40	23	1.29	2.37
41 to 50	22	1.39	2.57
51 to 60	7	1.99	2.83
Above 60	1	0.0	1.3

Association between place of birth (group of countries) and SCL-90-R scores

For this section, women were divided into three groups according to their place of birth: Europe, Middle East and North Africa. See maps in figure 32 and 33.

Spearman rho correlation was computed to check the association. Results showed that there was a significant correlation on the dimensions of somatization (r (114)=0.235, p=0.01), anxiety (r(114)=0.207, p=0.02), and the indices of GSI (r(114)=0.189, p=0.04) and PSDI (r(114)=0.31, p=0.001).

In order to check which group of countries had the highest means, a comparison of means test was done. Results showed that those significant dimensions and indices were higher among women who came from North Africa (see Table 40).

Table 40. Comparison of mean scores on somatization, anxiety, GSI and PSDI items according to country of birth group

Country groups		Somatization	Anxiety	GSI	PSDI
Europe	Mean	.95	.37	.59	1.84
	N	13	13	13	13
	Std. Deviation	.79	.28	.35	.43
Middle East	Mean	1.15	.60	.76	2.32
	N	46	46	46	46
	Std. Deviation	.77	.52	.36	.55
North Africa	Mean	1.45	.86	.91	2.49
	Std. Deviation	.73	.82	.50	.51
	N	57	57	57	57

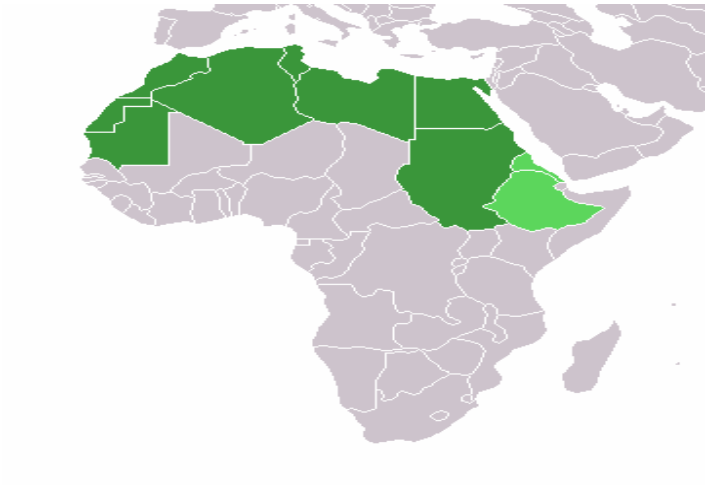


Figure 32. North African countries (highlighted areas in green)
Data source: http://en.wikipedia.org/wiki/North_Africa

Figure 33. Map of Middle Eastern countries
Data source: http://www.lib.utexas.edu/maps/middle_east.html#N

A differential test was also done on the three groups of countries to check if there is a significant difference between countries' groups on the indices of SCL.

ANOVA and comparison of means was done to check the difference in several independent variables on the three indices of stress GSI, PST, and PSDI (dependent variables). Results showed that there are significant differences in means between countries of origin groups, being ill the time of completing the questionnaire or not and feeling negatively being a migrant. On the other hand, marital status, type of work and level of education showed to be insignificantly different between groups. Table 41 presents significant factors giving values of F, significance level, mean and standard deviation.

Table 41. Comparison between SCL three indices (GSI, PST and PSDI) according to country of birth group, being ill the day of completing the questionnaire and that being a migrant negatively affects psychological status: results from (One-way ANOVA)

Variable	GSI	PST	PSDI
Country of birth group			
F	3.55	0.955	8.03
Significance	**0.032**	.38	**.001**
Mean difference			
European countries (N=13)	.59	27	1.84
Middle East (N=51)	.76	29.37	2.32
North Africa (N=52)	.91	31.98	2.49
Being ill the day of completing the questionnaire			
F	7.84	6.27	1.6
Significance	**.006**	**.014**	.20
Mean			
Yes (N=39)	.96	34.48	2.4
No (N=77)	.73	28.14	2.29
Being a migrant negatively affects psychological status			
F	18.80	20.94	7.95
Significance	**<.001**	**<.001**	**.006**
Yes (N=88)	.90	33.19	2.42
No (N=28)	.51	21.10	2.09

Association between level of education and the SCL-90-R scores

Spearman correlation was calculated for education level and the SCL-90-R items. Results showed that the level of education was significantly correlated with anxiety r(114)= -0.191, p=.0.04 and with PSDI score r(114)= -0.262, p=0.005. The direction of the correlation was negative, which means that the women who had higher education level had lower scores on these two items, or the women who had lower education level had higher scores on these items. These are medium effect size according to Cohen (1988).

Association between marital status and the SCL-90-R scores

Marital status was only associated significantly with the PSDI index score. Result of Spearman rho correlation was r(114)=0.212, p=0.02.

Comparison of means was done to check which marital status has the highest PSDI means. Results showed that married women have higher means than single, but divorced women showed to have the highest score means. Table 42 shows the difference.

Table 42. PSDI mean score index difference between women according to marital status

PSDI SCL index		
Marital status	**N**	**Mean**
Single	33	2.11
Married	71	2.44
Divorced	9	2.48
Widow	1	2.47
Engaged	2	1.98

Association between number of children and SCL scores

Number of children was associated with somatization and PSDI index scores. Pearson correlation for somatization was r(114)=0.220, p=0.01 and for PSDI was r(114)=.281, p=.002. As the direction of the correlation is positive, this means that women who had more children had higher stress scores. This is a medium effect according to Cohen (1988)[352].

Association between length of stay in Germany and SCL scores

Pearson correlation showed that the number of years in Germany was significantly negatively correlated with interpersonal sensitivity, r(114)= -0.190, p=.04 and with PST r(114)=-.196, p=.03. This means the longer women stayed in Germany, the less the interpersonal sensitivity score was; or the shorter women stayed in Germany, the higher the interpersonal sensitivity score was. This is s small to medium effect size according to Cohen (1988).

Association between type of work and SCL scores

Spearman rho showed that being employed was negatively correlated with PSDI index, r(114)= -0.193, p=.03. This means the score was higher for women who did not work outside the house. This is a small to medium size effect according to Cohen (1988).

To check which type of work scored higher on the PSDI mean scores, a comparison of mean test was done. The results showed that housewives had the highest means (2.46, n=65), followed by workers (2.30, n=19) and then the lowest mean was for students (2.13, n=32). ANOVA was then done to check the main effect on which items those housewives scored high. Results showed that housewives had significant mean difference on the items of somatization, anxiety, GSI and PSDI. This was on somatization F(4.739),

p=.004, anxiety F(5.404), p=.002, GSI F(2.683), p=.050 and PSDI F(3.579), p=.016 (see table 43).

Table 43. Comparison of mean scores of housewives on SCL somatization, anxiety, GSI and PSDI items (One-way ANOVA)

SCL items	Sum of Squares	Degrees of freedom	Mean Square	F	P value
Somatization	7.838	3	2.613	4.739	.004
Anxiety	6.623	3	2.208	5.404	.002
GSI	1.504	3	.501	2.683	.050
PSDI	3.112	3	1.037	3.579	.016
Total	35.580	115			

2. Correlation of health variables with SCL scores

Association between having a disease since migrating to Germany and SCL scores

Women who had a disease since they migrated to Germany were 112 (96.6%) and the ones who reported not having any disease were 4 (3.4%). Mann-Whitney U Test was done. Mean ranks were higher for women who answered 'yes' they had a disease on anxiety, hostility, psychoticism and PST dimensions compared to women who said 'no'. Table 44 provides the mean ranks with p values for the items that were significant.

Table 44. Mean rank difference of SCL scores for women who previously had a disease since they migrated to Germany and the ones who were not

SCL dimension	Had a disease? N (No=4, Yes=112)	Mean Rank	P value
Anxiety	No	22.63	0.02
	Yes	59.78	
Hostility	No	25.00	0.03
	Yes	59.70	
Psychoticism	No	24.00	0.02
	Yes	59.73	
PST	No	23.38	0.03
	Yes	59.75	

Association between being ill the day of answering the questionnaire and SCL scores

Women who were ill during the time of answering the questionnaire were 39 (33.6%), and women who were not ill were 77 (66.4%).

Mann-Whitney U test was done to check the association of being ill and the mean scores of the SCL dimensions and indices. Results showed that women who were ill the time

they answered the questionnaire had higher mean ranks on all the items of the SCL. The significant dimensions were somatization, anxiety, GSI and PST. Table 46 describes the mean ranks and the p values (see table 45).

Table 45. Mean rank difference of SCL somatization, anxiety, GSI and PST scores for women who were ill the day of answering the questionnaire and the ones who were not: results from Mann Whitney U test

SCL dimension	Has a disease the day of answering the questionnaire?	N	Mean Rank	Assymp. Sig. (2-tailed) P value
Somatization	No	77	50.05	<0.001
	Yes	39	75.19	
Anxiety	No	77	51.44	0.001
	Yes	39	72.44	
GSI	No	77	52.66	0.009
	Yes	39	70.04	
PST	No	77	52.41	0.006
	Yes	39	70.53	

Association of physical exercise and SCL scores

Pearson correlation was performed and showed that physical exercise was negatively associated with SCL scores of somatization ($r(114)= -0.298$, $p=.001$), GSI($r(114)= -0.213$, $p=.022$), and PST ($r(114)= -0.215$, $p=0.02$). This negative direction of the association means that women who exercise less have higher scores on SCL.

When Pearson correlation was done between *age and performing exercise,* there was a negative significant correlation as well. This means that the older women are, the less exercise they perform and vice versa. Table 46 shows the correlation and p value.

Table 46. Pearson correlation between age and physical exercise performance

	Age	How many times a week do you perform physical activity (which lasts at least 20 minutes)?
Pearson Correlation	1.000	-.295**
Sig. (2-tailed)		.001
N	116	116
** Correlation is significant at the 0.01 level (2-tailed).		

Relationship between feeling of being treated differently by health team and satisfaction with health care

To investigate the relationship between women's satisfaction with health care and the level of discrimination they feel when they seek medical care, Spearman rho statistic was calculated, r(114)=0.27, p=0.003. Kendall's tau-b test was also done and showed the same results (value=.226, p=0.003). The direction of the correlation was positive, which means that women who felt more discriminated by the health personnel tended to be more dissatisfied with health care and vice versa. Using Cohen (1988) guidelines, the effect size is medium. See table 47.

Table 47. Spearman correlation between satisfaction with health care and feeling of discrimination when seeking health care

		What is the level of difference that you feel when health personnel deal with you in comparison to the German patients?
	Correlation Coefficient	**Sig. (2-tailed)**
To what level are you satisfied with the health care in Germany?	.270**	.003
N	116	
** Correlation is significant at the .01 level (2-tailed)		

3. Association between psychological variables and SCL scores

Association between women's negative feeling of being migrants and the scores of SCL-90-R

Mann Whitney U test showed that there are significant differences in the mean ranks between women who felt negatively and the ones who did not; they were higher for women who felt negatively being a migrant. Table 48 presents the mean ranks with the p values.

The above mentioned association results show that the null hypothesis of not having association between demographic, health and migratory status and stress scores can be rejected. Moreover, results showed that there is an association between feeling of being

treated differently by the health team and the level of satisfaction from health care; this was clear both from the results of the focus group discussions and the questionnaire, so the null hypothesis can be rejected as well.

Table 48. Association between feeling negatively being a migrant and mean scores of stress on SOM, INS, DEP, ANX, PHO, GSI, PST and PSDI: results from Mann Whitney U test

SCL dimension	Feel negatively being a migrant? N(No=28, Yes 88)	Mean Rank	Asymp. Sig. (2-tailed) P value
Somatization	No	32.88	<0.001
	Yes	66.65	
Interpersonal sensitivity	No	43.93	0.008
	Yes	63.14	
Depression	No	35.82	<0.001
	Yes	65.72	
Anxiety	No	44.16	0.009
	Yes	63.06	
Phobic anxiety	No	43.20	0.004
	Yes	63.37	
GSI	No	35.63	<0.001
	Yes	65.78	
PST	No	34.96	<0.001
	Yes	65.99	
PSDI	No	44.00	0.009
	Yes	63.11	

Association between asking for help when under stress and the number of persons providing support on scores of SCL-90-R

Mann-Whitney U test was calculated to check any correlation between asking for help and psychological stress. Results show only one significant result on phobic anxiety dimension (p=0.01). Pearson correlation was calculated to check if there was any relation between the number of persons providing support and the SCL scores, and the results showed no significant correlation.

These results support the fact to reject the null hypothesis that there is no association between socio-demographic, health, or psychological status and the scores of stress as measured by SCL.

Table 49 summarizes associational correlations for socio-demographic characteristics, health status and psychological status with SCL scores using bivariate analysis.

Table 49. Summary of the bivariate associational correlations between socio-demographic, health, and psychological variable and SCL scores

Variable	SCL dimensions											
	SOM	**OC**	**INS**	**DEP**	**ANX**	**HOS**	**PHO**	**PAR**	**PSY**	**GSI**	**PST**	**PSDI**
Age	.22*											.28**
Education					-.19*							-.26**
Marital status												.212*
Number of children												.22**
Length of stay in Germany			-.19*								-.196*	
Type of work												-.19*
Other variables												
Was ill			* *		*					*	*	
Currently ill	**				**					*	*	
Physical exercise	-.29**									-.21*	-.21*	
Feeling negatively being a migrant	**		**	**	**		**			**	**	**
Asking for help when under stress							**					
** P<.01 * P<.05												

Second: Multivariate analysis

Multiple linear regressions

Simultaneous multiple regression was conducted to examine the relationship between the dependent variables which are the SCL-90-R three indices (GSI, PST and PSDI) and different dichotomous or continuous independent variables controlling for the effects of other independent variables. In each model, the dependent variables measures were continuous and the independent variables measures were either dichotomous or continuous.

Before doing multiple regressions, independent variables were checked for normal distribution and multicollinearity. Results showed that nearly all the variables are

approximately normally distributed. Multicollinearity was checked through bivariable correlation between the independent variables and the results showed no correlation between them. Several regression models were constructed including and excluding one of the independent variables, and the observation showed that there was no substantial change in the regression coefficient when different models were considered.

The aim of the repeated measure of simple linear regression was to investigate how significant different socio-demographic, health variables and their combination are associated with each of the three SCL indices. Regressions in this part were done in two steps:

- Dichotomous and continuous independent variables were first checked for clustering using scatter plots. Then, the outcome variables were entered to be GSI, PSDI, PST indices respectively with different independent variables.
- For the second part of the regression the outcome variables were entered to be GSI, PSDI, PST indices respectively with the combination of variables that showed to be significant in the previous models ($p<0.20$).

The first dependent variable entered was GSI and the independent variables included all the non-clustered variables. Excluding the insignificant variables, a final model showed that having a disease since migrating to Germany, being ill the day of answering the questionnaire, and feeling negatively being a migrant are best variables to predict GSI stress score index. The adjusted R squared was 0.21which means that 21% of variance in the GSI score is explained by this model.

The second dependent variable that was used in the regression model was PST including first all the non-clustered variables and then excluding the insignificant ones. Results showed that the best model was the one that included having an illness since migrating to Germany, and feeling negatively being a migrant. The adjusted R squared was 0.19 which means that 19% of variance in the PST score can be explained by this model.

The last dependent variable that was entered in the regression model was PSDI score including first all the non-clustered variables and then excluding the insignificant ones. The best model was the one that included age, and feeling negatively being a migrant. The adjusted R squared was 0.11 which means that 11% of variance in the PSDI score can be explained by this model.

A comparison of the three models shows that the best regression model is the first one on GSI score index. Table 50 summarizes the regression models.

Table 50. Multiple linear regression models for GSI, PST and PSDI indices

SCL index	B	P value	95% CI
GSI			
Had a disease since migrating to Germany	.39	.05	-.009-.80
Being ill the day of answering the questionnaire	.16	.05	-.004-.31
Feeling negatively being a migrant	.38	<0.001	.21-.55
Adjusted R square=0.21 F=10.205**			
PST			
Had a disease since migrating to Germany	16.00	.01	3.60-27.70
Feeling negatively being a migrant	13.00	<0.001	7.66-17.93
Adjusted R square=0.19 F=14.30**			
PSDI			
Age	.12	.004	.004-.02
Feeling negatively being a migrant	.30	.01	.07-.52
Adjusted R square=0.11 F=8.44**			
* P<.05 **P<.01			

4. Predicting psychological distress

Binary logistic regression

The aim of the logistic regression was to determine a list of predictors that can help psychologists, counselors, or persons working with migrants to rapidly screen if clients are likely to experience psychological stress. The hypothesis to be tested in this section was that the combination of several independent variables will predict if women will score high on the SCL instrument or not.

In order to do this, women were classified as either being cases or non-cases on the SCL-90-R instrument. This was done by taking the GSI index mean of the normative sample as a reference/cut point (0.31). The literature suggests that GSI is the best single indicator of the psychological stress level or disorder[353], and the GSI index has also been used as a psychiatric outcome measure. Moreover, most scientific results published with SCL-90-R used simple mean values for the GSI to classify cases or non-cases. Women with a mean

score of 0.31 or higher on the GSI were considered to be cases and women with a score below 0.31 were considered non-cases.

Following this procedure, most of the women were classified as cases and the regressions performed did not identify predictors, probably due to the small sample size. For this reason, several steps were taken:

- Instead of taking the mean as a cut point, it was decided to calculate the median and to consider it as a non-clinical cut point; median was 0.77.
- The variables to be included in the regression model were dichotomized.
- Each of the variables was checked individually if significant or not in a logistic regression (variables were considered significant if P value was <0.20). This helped to identify significant candidate variables to be included in the binary logistic regression.

After these modifications, logistic regressions were repeated. Multicolinearity was checked by checking correlations of estimates and by checking the Standard Error values. Upon the results provided in table 51, variables that showed to be significant (P<0.20) were included in the first model (plus age for its importance as a socio-demographic variable), and then repeated models were done excluding insignificant variables until the last model was reached in which all the included variables were significant (P<0.05).

The best model that predicted being a case on SCL was the one that included being ill while completing the questionnaire, length of stay in Germany and feeling negatively about being a migrant (migratory status). The accuracy of this model was 66.4% seen in table 53 as the overall percentage. The amount of variation explained by this model was 20.4% (Negelkerke R square =0.204). This means that 20.4% of the variation in the dependent variable (being a case on SCL) is explained by this logistic model. In this model, the variable of being ill while completing the questionnaire was an important predictor for having a higher stress score as seen from p and odds ratio value. Table 52 summarizes the logistic regression models performed.

Table 51. Logistic regressions for each variable with confidence interval and P value

Variable*	Exp(B) OR	95% CI (lower and upper)	P value
Age	.99	.967-1.033	.95
Country group (taking last as reference which is North Africa)			
Group 1 (European, n=13)	.581	.171-1.97	.38
Group 2 (Middle East, n=51)	.47	.216-1.041	.06
Education by group (taking last reference which is Bachelor)			
Illiterate (n=9)	3.33	.59-18.54	.16
Primary (n=14)	2.22	.51-9.6	.28
Preparatory (n=30)	1.66	.48-5.75	.41
Secondary (n=35)	1.57	.46-5.27	.46
Diploma (n=12)	1.66	.36-7.6	.51
Marital status (yes=83, no=33)	.77	.345-1.74	.53
Having children (yes=70, no=46)	.648	.306-1.37	.25
Stay in Germany (<15 years=64, >15 years=52)	.42	.202-.904	.02
Job/work (yes=51, no=65)	1.07	.515-2.23	.85
Ill at time of answering questionnaire (yes=39, no=77)	2.812	1.257-6.292	.01
Discrimination feeling (yes=68, no=48)	1.22	.413-1.817	.70
Exercise (yes=26, no=90)	.547	.224-1.33	.18
Minority status (feeling negatively being a migrant) (yes=88, no=28)	4.135	1.592-10.739	.004
Asking for help when under stress (yes=103, no=13)	.84	.264-2.67	.76
Visiting home country (yes=102, no=14)	.356	.105-1.209	.09
* Variables with p<.20 to be included in logistic regression models			

Table 52. Summary of logistic regression prediction models

Logistic model	Overall prediction %	Positive %	Negative %
Model 1: All significant variables (p<0.20) from table 52 in addition to age	69	65.5	72.4
Model 2: Country group, education level, being ill, feeling negative being migrant, and visiting home country (excluding variables with p>.20)	68.1	63.8	72.4
Model 3: Country group, being ill, length of stay, feeling negative being a migrant, and visiting home country (excluding variables with p>.20)	70.7	72.4	51.7
Model 4: Being ill, length of stay, feeling negative being a migrant, visiting home country (excluding variables with p>.05)	65.5	79.3	51.7
Model 5: Being ill, length of stay and feeling negatively being a migrant Being ill: Exp(B)=3.38, 95% CI (1.38-8.29), p=.008 Length of stay (below 15 years): Exp(B)=2.43, 95% CI (1.02-5.78), p=.04 Feeling negative: Exp(B)=2.97, 95% CI (1.07-8.23), p=.03	66.4	79.3	53.4

The results of the regression analyses support rejecting the null hypothesis that the combination of different independent variables (socio-demographic, health, or psychological ones) cannot predict being a case of stress on the SCL instrument.

8.4.6 Results from the intervention step

Out of the 116 women, 56 women provided their telephone numbers or addresses in the questionnaire. However, after contacting those only 46 were part of the intervention program, yielding a response rate of 39.6%. As this was a study to pilot test an intervention approach, these sample size and response rates were considered adequate.
The intervention section required also gathering information on what has been done for migrant health in Cologne and in Germany; what is present in the literature concerning effective methods on dealing with psychological stress; and what can be done for the women sample in this study.

8.4.6.1 What has been done concerning psychological health of migrants in general and Arab migrants in specific in Cologne and in Germany?

With the COPC team, we searched and checked for available institutions, organizations, publications or activities that had been implemented among Arab migrants or were available in Arabic language either in the city of Cologne or in Germany in general. The search was focused on health in general and on psychological health in specific, including curative and prevention activities. In addition to a literature search, the COPC team investigated the past experiences of the practice, and the experiences of other agencies and organizations, and the community. We made personal contacts and phone calls to the centers we found in order to get detailed information. The following presents what was found in the city of Cologne and in Germany:

A. In the city of Cologne

A booklet that was issued by the city of Cologne as a guide for the health of migrants in the year 2003 provided the following information[354]:

Medical doctors

There are 13 physicians who speak Arabic language in Cologne. These are from different specialties: 3 general physicians, 3 surgeons, 1 gynecologist who is a psychotherapist, 1 ear nose throat (ENT), 1 psychiatrist and neurologist, 1 radiologist, and 1 urologist.

Clinics and institutions

Arabic-speaking personnel are available in two hospitals in Cologne: in Holweide hospital and in Malteser hospital. However, Arabic language is not available in the main clinic of psychiatry and psychotherapy or even in any of the day clinics in the city.

The following information was found about counseling services:

- Psychological counseling: social counseling without treatment is available in Arabic language, and Caritas provides refuge counseling. The other counseling services such as the international family counseling site of Cologne city, the health center for migrants, the family counseling of Cologne city and women counseling in Kalk/Cologne are only available in Turkish or Russian languages, but not in Arabic.
- Psychosocial counseling: there are 3 offices for the Diakonia in Cologne for refugee counseling, but none of them offers Arabic language services.
- Pregnancy counseling: there are 4 offices for Pro Familia, but none offers Arabic language.
- AIDS and sexual diseases: Arabic language is not available.
- Other counseling sites, such as the intercultural refugee center, Arabic language is not offered.
- Self help groups: none is available in Arabic language.

Printed materials

Literature and websites were searched to check if there were any printed materials in Arabic. The site of the Federal Center for Health Education (Bundeszentrale für gesundheitliche Aufklärung "BZgA") www.bzga.de had one brochure available in Arabic: "Pregnant? What to do? Information for migrants in Germany for counseling and help in pregnancy".

Finally, searching the literature for any health materials that were published in Arabic in Germany showed the following list[355], see table 53.

Table 53. List of publications available in Arabic in Germany with the publishing institution

Title of publication	Publishing organization
Family planning, pregnancy sexuality field	
Information for migrant in Germany for counseling and help in pregnancy, German-Arabic	Arbeiterwohlfahrt Bundesverband e.V., Bonn
Information paper on abortion	Counseling center for family planning, pregnancy conflict and questions of sexuality, Essen
Pregnant? information for migrants in Germany for counseling and help in pregnancy	Bundeszentrale für gesundheitliche Aufklärung "BZgA"
Care of pregnancy and seeking care for young children	Die Auslanderbeauftrgragte des Landes, Bremen
Who asks what in the field of family planning, sexuality, partners and questions of health	Pro Familia e.V. Bundesverband, Frankfurt
Condom use	Pro Familia e.V. Bundesverband, Frankfurt
How do we protect our daughters from genital mutilation?	Terre des femmes, Tübingen
Child health field	
Info map "health and nutrition"	Modellprojekt "Interkulturelle Offnung", Berlin
Information leaflets on different vaccinations	Gesundheitamt des Landkreises Halberstadt
A leaflet on the understanding of vaccinations against diphteria, tetanus, pertusis, mumps, measles, German measles, polio	Landesamt für Asyl und Fluchtlingsangelegenheiten, Nostorf
Protection against the diseases in kindergartens, schools and gathering places of children and vaccinations	Gesundheitsamt, Münster
Chronic diseases field	Nothing in Arabic
Nutrition field	
Health and nutrition, information material for action	Modellprojekt "Interkulturelle Oeffnung", Berlin
Live healthy, health through right nutrition	Gesundheitsamt, Münster
Cancer field	Nothing in Arabic
Addiction field	
A brochure for parents: addiction problem and school	Fachberatung für Suchtprävention und Drogenfragen beim Staatlichen Schulamt für die Stadt Frankfurt am Main.
Sexually transmitted diseases, HIV/AIDS field	
What does HIV and AIDS mean?	Aids Info Docu Schweiz, Bern
Information paper on Hepatitis B	
Condom use	Pro Familia, Frankfurt am Main
Infectious diseases/Vaccinations field	
Brochure on the causes, symptoms and treatment of tuberculosis	Deutsches Zentralkomitee zur Bekämpfung der Tuberkulose, Berlin
Advice on Tuberculosis	Fatol Arzneimittel, Schiffweiler
Information paper on Hepatitis A	Landesamt für Asyl und Flüchtlingsangelegenheiten, Nostorf
Information paper on Hepatitis B	Landesamt für Asyl und Flüchtlingsangelegenheiten, Nostorf
Explanation paper on vaccinations	Landesamt für Asyl und Flüchtlingsangelegenheiten, Nostorf
Health tips for men and women who have AIDS	
Vaccination is better than treatment brochure	Schweizerisches Rotes Kreuz, Bern

Miscellaneous	
Infected teeth cause lots of pain and cost lots of money, what can you do against that?	Projekt "Zahnprophylaxe" Migrantinnen der Klasse BVJM/b der Staatlichen Schule Gesundheitspflege
General	
Information for asylum seekers	Bundesarbeitsgemeinschaft der Freien Wohlfahrtspflege e.V., Berlin

Data source: Health guide for migrants in Cologne, 2003

At the BFmF center

The center has social and psychological counseling services in different languages including Arabic language. There are two social workers and one psychologist who work with women. The main problem faced by this counseling team is the shortage of Arabic speaking psychotherapists that women can be referred to. There is only one psychotherapist in Cologne who speaks Arabic, who is also a gynecologist. Staff at the center tries its best to reach women and work with them as much as possible, using the following methods:

- Contacting community leaders, such as Imams (religious leaders) in mosques or active women and men in the Arabic community, and requesting from them to concentrate on family matters in their discussions, such as the rights of women and children.
- Providing social and psychological counseling hours at the center; or referral of cases to the only Arabic-speaking psychotherapist, who is a female. Women prefer to talk about their problems to a female, especially about very private and personal matters in the family.
- Sometimes women are referred to psychotherapists in other cities, such as in the city of Aachen and Frankfurt, but the long distance is a barrier for many women.
- Moreover, there are free of charge counseling hours on migration at the center on certain days. Women have the chance to ask about certain procedures, offices or how to complete certain forms and documents.

Health center for migrants in the city of Cologne

There is one center called the Health Center for Migrants in Cologne. This center was established in 1995 to provide professional contacts, help and information to migrants.

The center acts as a contact point between migrants and health professionals of different specialties. Languages available are Turkish, Russian and German. There are also translators for Spanish, Greek and Italian. The center is directed by a Turkish social worker. In rare cases when an Arab migrant seeks service, the center staff tries to find a translator, but those cases are referred to BFmF center, where Arabic speaking social workers are available (information received by a phone interview in October 2004).

Other activities related to Arab migrants in Cologne

Searching the family branch book of Cologne in the migrant section revealed that the following centers work on migrant issues[356]. The COPC team assisted in contacting all these centers by phone in April 2005. Although these centers provide activities for migrants in general, it was found that none of them had any activity specifically for Arab-speaking migrants. Those were:

- Allerwelthaus.
- Caritasverband International Sozialdienst.
- Deutscher Familienverband Kreisverband Köln.
- Frauentreff Kölnberg.
- Jugendmigrationdienst.
- Kath Jugendswerke Köln.
- Pro Dialog Köln.
- Internationale Familienberatung (Caritas).

B. In Germany

Results of studies on psychological health of migrants in Germany showed that there is a shortage of research in this regard, and in turn one cannot make general statements that are representative for all migrants. However, research showed that there are problems in diagnosing psychological problems due to language obstacles, socio-cultural and ethno-linguistic discrepancies[357]. There is also a deficit in psychosocial care targeting migrants in general.

A literature review showed that there have been few projects concerning the psychosocial health of migrants in Germany; but most of those projects tackled migrants from non-

Arabic countries; mainly Turkish, Italian or Russian migrants. These projects were in big cities, such as in Berlin, Frankfurt …etc[358]. The following projects were found:

- A model project in Frankfurt between a Turkish-German speaking clinic and psychosocial counseling centers[359].
- As part of the European Union Migrant Fathers Project, a project was held in Germany in different cities (Cologne, Wuppertal and Gladbach) on adult learning. This included different Kurdish and Turkish participants to encourage discussion of roles of mothers and fathers in the upbringing of children, teenage behavior and communication within the family[360].
- A model project on improving the care of psychosomatic migrant patients in house doctor clinics in Freiburg[361].
- A project in a hospital in Marburg for the treatment of Turkish psychiatric patients[362].
- Ethno-medical center in Hanover that was established since 1989. The major activities of the center are: a project called with Migrants for Migrants for health provision and prevention on topics like (AIDS, drug addiction, oral health, vaccination, women and child health); explanation of information about health in the mother tongue for the aim of prevention; translation services for social and health needs; training and meetings on different topics; counseling; self-help groups; social, psychiatric and psychosomatic care; provision of opinions in intercultural field; and some publications.
- A project in the city of Essen in the scope of 'Healthy cities'.
- The organization of "public health days" for migrants as was done in Düsseldorf in 1998 for Turkish families.
- Searching the internet using psychological support/counseling for Arab foreigners/migrants as search words gave the results that most of work done was in Berlin, in which a center provides psychological counseling[363], and some other work was also done in Düsseldorf[364].

There are also projects on fighting discrimination[365] in Germany that were designed and implemented by different organizations. Of those were:

- A program organized by the Landeszentrum für Zuwanderung (LzZ) in NRW on 'Community Action Program to Combat Discrimination 2001-2006'. One project is 'Network and Training Program for Counseling Providers to victims of Discrimination'. The main objective of the project is to improve the access to and provision of counseling services to minority groups who face discrimination due to their ethnic origin, or a physical handicap by creating a forum for the exchange of information and know-how among a broad range of service providers. The target group of the project is social service counselors, whose clients include immigrants, persons belonging to ethnic minorities or persons with disabilities. The project involves a number of activities including transnational network, a training program for counselors, and information services such as seminars, lectures, literature…etc.

  This project has different cooperation partners from Italy, Spain and the Ministry of health, Social, Women and Family of NRW, Caritas organization in Cologne and an educational center in the city of Aachen, and others.
- Project by BFmF center on 'Dialogue instead of Confrontation' supported by The German Federal Ministry for Families, the Elderly, Women and Youth and The German Federal Ministry of the Interior. The project aims at organizing seminars in different places to raise awareness about Islam and issues related to having more communication panels between German and non-German people.
- There was a Working Group for Anti-discrimination Counseling Services project from 2001-2002. This is for the dissemination of information about current developments in anti-discrimination policy and work. This project has different copartners: Caritas organization in Cologne, Diakonia in NRW, the University of Bielefeld, Polytechnic in Cologne and others.
- Another project was on 'Equal Opportunities for Migrants in the Public Service'. Since 2002, there is a working group of representatives from public sector administration, trade unions, migrant organizations, lawyers and equality experts that meet at the LzZ (Landeszentrum für Zuwanderung) to

exchange information concerning the improvement of employment opportunities for migrants and ethnic minorities in public service.

- ‘Anti-racist and Intercultural Training put to the Test’ project from 1999-2002. The project was in cooperation with Information and Documentation center for Anti-racist work and the University of Wuppertal.
- ‘Anti-discrimination work in Local Communities- Information and Material’. In this project, in cooperation with Anti-racism International Center in North Rhine Westphalia (ARIC-NRW), a guideline concerning anti-discrimination work was developed for practical use in local communities. Its purpose is to provide support for and give suggestions to persons, who want to create a facility (anti-discrimination office) in their town for victims of discrimination. The guideline is designed for non-governmental organizations, welfare associations and local administrations (intercultural departments and offices of the Commissioner for Foreigners’ Affairs).
- ‘Socio-Cultural Management in Urban Districts- Peaceful Conflict Resolution in Urban Communities, especially in low income areas’. This project was carried out in five different areas in the NRW from 1999-2002; in Dortmund Nordstadt, Detmold-Herberhausen, Cologne-Kalk, Solingen-Fuhr, and in Wuppertal-Osterbaum.
- The ministry of Family, Seniors, Women and Youth has several projects on integration of migrants[366].

8.4.6.2 Literature concerning dealing with psychological stress

In order to choose an effective intervention program, there was the need to search the literature for effectual methods to deal with psychological distress.

Several stress-reducing interventions have been developed over the years to counter psychological problems in different countries. Those varied from using physical approaches including relaxation and physical exercise or cognitive approach including carrying out health education sessions. Research shows that the focus of stress interventions can be an individual, an organization, or a combined approach can be used[367]. In this study, the effectiveness of both the individual and the cognitive

approaches concentrating on Arab migrant women sample for the intervention was taken into consideration.

A. Physical approach

Interventions based on a physical approach, such as relaxation and physical exercise aim at improving mental health by reducing physiological arousal[368]. According to Murphy (1996)[369] relaxation is involved in approximately 75% of stress management programs. Moreover, there is good evidence from randomized controlled trials that relaxation techniques can reduce psychological complaints, especially anxiety related symptoms related to stressful situations[370]. A review of studies published in English between 1966 and 2000 found that relaxation technique and stress management workshops were effective methods to manage stress for people under it, mainly job related stress[371]. Moreover, a recent meta-analysis that assessed the effect sizes of stress management programs showed that relaxation techniques have a large effect size on psycho-physiological status[372], especially for depressive symptoms and the ability to cope with stress situations[373], [374]. Recently, several studies have consistently associated physical exercise with better mental health[375].

Literature has shown different effective methods to deal with stress[376], including:

- Progressive relaxation also called "deep-muscle relaxation" invented by Edmund Jacobson[377], progress through the body, tensing, and then relaxing each major muscle area.
- Autogenic suggestion-self-regulation uses the power of the mind to control those inner automatic body systems (heartbeat, breathing, blood pressure) that create the fight or flight stress response. This method developed by two German physicians, Johannes Schultz and Wolfgang Luthe (1959)[378], the techniques uses verbal cues "Warmth is flowing into my arms" which helps to condition the body to reduced stress reaction. The method teaches to create a feeling of warmth and heaviness throughout the body, thereby experiencing a profound state of physical relaxation, bodily health and mental peace.
- Meditation can soothe both mental worries and physical tension.

B. **Cognitive approach**

Individual-focused interventions based on cognitive techniques aim at reducing complaints through changing appraisal processes (cognition) and/or enhancing coping skills (behavior)[379],[380]. The positive effects of cognitive interventions have been extensively reported with regard to patients with depressive[381] and/or anxiety disorders[382].

In general, each person can choose the relaxation methods that respond to the type of stress one has. But there are some tips for choosing the best relaxation technique[383]:

- If the stress is in the body, there is a need for a method that will break up the physical tension pattern. These could be aerobics, progressive relaxation, swimming, body scan, biking, rowing, walking, Yoga, massage and soaking in a hot bath or sauna.
- If the stress is in the mind in the form of invasion of worrisome thoughts, the most direct intervention is anything that will engage the mind completely and redirect it. Some methods could be meditation, autogenic suggestion, reading, TV, games like chess, knitting, sewing or any other hand craft.
- If the stress is in the body and mind and the stress is a mixed type, one can try a physical activity that also demands mental rigor such as competitive sports (tennis, squash, volleyball …etc), meditation or any combination from the mind and body methods.

8.4.6.3 What more can be done for Arab migrant women in the city of Cologne?

Results from the focus group and key informant interviews as well as from the detailed assessment questionnaire showed that women are under high psychological distress and showed various psychological complaints, but women used poor methods to deal with their stresses, such as only crying and low performance of physical exercises and activities, or isolation. Hence, this made it more difficult for them to cope effectively with stress, and in turn they scored high on the SCL-90 dimensions. Moreover, the first

section of the intervention step was searching what has been done concerning psychological stress, and it was clear that there is a shortage in tackling this issue among migrants in Germany.

Therefore, an intervention program including both physical and cognitive methods was designed with the COPC team. This included carrying out courses on physical exercise, relaxation techniques and stress management sessions on dealing with stress. For the cognitive part, this included carrying out sessions on health related issues of special interest, and designing materials in Arabic language. Women were asked in the questionnaire what they do in their free time in order to get an insight on the intervention activities and the methods to address them. The training course on health awareness and the preparation of the health educational materials in Arabic language were carried out by the researcher. The center was responsible for contracting a trainer for the relaxation and physical exercise approach and providing the space to carry out the activities.

Concerning the sustainability of the activities, it was decided with the team that after the evaluation part, some of the activities will be repeated such as printing more of the Arabic designed materials to make them available at the center and to be distributed to other centers and clinics. If physical exercise equipment are purchased and set up at the center, the team will advertise their availability with a set time schedule and will decide on a small fee for their use by women. The center will assign a member to be responsible of programming and taking care of this part.

8.4.7 Results from Evaluation

This part includes evaluation from both the post intervention stress scores as well as from other activities that were part of the intervention program.

8.4.7.1 Results from post-intervention SCL-90-R stress scores

After the implementation of the intervention program, a post test was performed for all the women who participated in the program using the SCL-90-R questionnaire (outcome evaluation). Before doing the paired samples T test, some descriptive statistics were used to check if there was any kind of selection bias or special characteristics of the women who participated. Table 54 summarizes the main characteristics of women.

Table 54. Descriptive characteristics of intervention sample group

Variable	Fr.	%	Variable	Fr.	%
Age Range: 18-55, Mean: 32.93			**Type of work**		
Years in Germany Range: 1-36, Mean: 13.76			Housewife	27	58.7
Country of origin			Worker	7	15.2
Europe	4	8.7	Student	12	26.1
Middle East	15	32.6	**Had a disease since coming to Germany**	46	100
North Africa	27	58.7	**Ill the day of answering the questionnaire**		
Education			Yes	21	45.7
Uneducated	5	10.9	No	25	54.3
Elementary	7	15.2	**Physical exercise performance**		
Preparatory	12	26.1	Yes	8	17.4
Secondary	14	30.4	No	38	82.6
Diploma	3	6.5	**Feeling negatively being a migrant**		
Marital status			Yes	39	84.8
Single	12	26.1	No	7	15.2
Married	29	63	**Asking for help when under stress**		
Divorced	4	8.7	Yes	41	89.1
Engaged	1	2.2	No	5	10.9
Number of children			**Effect of psychology on nutrition**		
No children	19	41.3	Yes	44	95.7
1-5	21	45.7	No	2	4.3
6-10	6	13	**Visiting home country**		
			Yes	40	87.0
			No	6	13.0

Paired samples T-test was carried out on 46 women and the SCL-90-R scores after the intervention were compared to pre-intervention scores. The paired samples t test indicated that women's scores of stress after the intervention were significantly less than the scores before the intervention program, except for psychoticism dimension. This supports rejecting the null hypothesis that there is no effect of physical exercise, stress management methods and health education on reducing stress scores. Table 55 presents details about SCL mean scores before and after the intervention, standard deviation before and after intervention, and confidence interval, T values, and P values for post intervention scores.

Table 55. Paired samples T-Test of post intervention SCL-90-R scores (N=46)

SCL items	Mean before intervention	SD before intervention	Mean after intervention	SD after intervention	95% Confidence interval (Lower and Upper values)		T value	P value
SOM	1.26	0.77	.57	.13	.94	1.34	11.56	<.001
INS	1.4	0.76	.66	.21	.14	.29	5.65	<.001
O-C	0.36	0.34	.25	.18	1.08	1.40	15.59	<.001
DEP	1.44	0.83	.66	.16	1.20	1.59	14.43	<.001
ANX	0.69	0.67	.49	.23	.42	.80	6.6	<.001
HOS	0.37	0.48	.30	.22	.22	.47	5.7	<.001
PHO	0.38	0.59	.20	.18	.26	.61	4.9	<.001
PAR	0.33	0.49	.23	.19	.14	.45	3.9	<.001
PSY	0.20	0.34	.20	.13	.07	.28	3.3	.002
GSI	0.81	0.44	.52	.17	.56	.75	13.6	<.001
PSDI	2.34	13.1	1.97	7.01	11.6	16.61	11.35	<.001
PST	30.27	0.55	25.23	.37	.65	.79	20.54	<.001

8.4.7.2 Results from evaluation of other activities

Supporting the hypothesis that there is an effect of the intervention program, observations and feedback on activities showed that there is a positive change and effect on the participating women. In order to evaluate the effectiveness of the intervention program that included several activities, a program review method was used which included reviewing records and checklists as well as observation and feedback. The indicators for the evaluation were outcome, process and structure as shown in table 56 and the time plan for evaluation is shown in table 57.

Reviewing records and lists of participants showed the following:

- Of the 46 women who participated in the courses only two participants were absent for one of the sessions.
- In the feedback discussion that was held at the end of the courses, women reported that courses widened their knowledge, provided new information and were so effective that they felt a change on their bodies. Women planned to continue with exercise and relaxation methods they learned.
- The distribution of Arabic materials was very successful in the center and in clinics (distribution rate in the period of the intervention program was 100%). The COPC team made more copies and distributed them upon request.
- The center had contacted a trainer and several funding agencies as a first step to purchase the physical exercise equipment.

- Women who sought the counseling sector will be evaluated after having had the announcements set in public for 6 months. This will be done by measuring the increase in numbers per month compared to months before having the announcements.

Table 56. Evaluation components (outcome, process and structure) by indicator and method

Evaluation aspect	Indicator	Method
Outcome "objectives"	- Number of women who attended the courses - Reduction in psychological stress scores measured by SCL-90-R - Number of women who used the counseling services at the center - Availability of physical exercise machines at the center and their use	- Review checklist of attendants - Post intervention questionnaire (SCL-90-R) - Review of records for the counseling services - Review of records both for machine usage
Process "activities"	- Number of held courses - Number of participants in courses - Availability of machines at the center - Number of new Arabic materials designed - Distribution rate of these materials - Number of new users of the counseling services at the center in Arabic language	- Reviewing records - Attendance checklist review - Observation - Reviewing records - Reviewing records of distribution numbers - Record reviews
Structure "materials and equipment"	- Availability of health education materials in Arabic language at the center, clinics, and other centers - Availability of physical exercise machines at the center - Availability of counseling hours in Arabic language at the center	- Observation - Observation - Observation and reviewing files

Table 57. Time plan for the evaluation step

Activity	2005						2006		
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Evaluation									
Keep monitoring, obersvation and follow up									
Get feedback from center, women, and clinics									
Final evaluation with reviewing records, and attendants' lists									
Present results of the whole study to the team									

In summary, this chapter presented the results from the six steps of the COPC approach which was found to be a practical method to study the needs of a community. While Arab migrant women face different kinds of problems, psychological stress forms a major health concern for them, which was confirmed by high SCL-90-R scores. Results showed that stress was associated with some demographic and health variables as well as with negative perception regarding being a migrant. Additionally, perceptions of being treated differently from non-migrants and perceived discrimination affect the level of satisfaction with health care. The combination of several socio-demographic, health and psychological variables can predict stress among migrants. Finally, results showed that the intervention activities using physical and cognitive methods had an effect on reducing stress scores.

CHAPTER NINE

9 DISCUSSION

The aim of the study was to explore the application of the COPC approach to study the main problem that Arab migrant women face (psychological stress) and to assess the associated factors with that problem.

This section discusses the results of the six steps of the COPC approach using different data collection methods, which were focus groups, key informant interviews, open group discussion meeting, questionnaire including SCL-90-R, and the intervention and evaluation activities.

9.1 Focus groups and key informants

This part of the study had an explorative aim to understand the situation of Arab migrant women and to obtain the maximum amount of information, views, beliefs, opinions and attitudes from the participants.

The five focus groups were homogeneous including migrant women speaking the same language coming from similar cultures which facilitated the discussion with them. The fact that the researcher spoke the same language (Arabic) as the participants reduced the communication barriers. Many of the participants took the opportunity to gain knowledge from the focus group sessions, as many women asked different questions related to health issues that were discussed after the sessions, and then were later included as health education topics in the intervention program. The key informant interviews added more understanding on the situation of the Arab migrants in general and on the availability of health data on migrants.

The study found that women held belief about health concept including physical health and psycho-social aspects. They also stressed the importance of health of mind and soul. Views on physical, social and psychological health were presented to be of great importance and could interact in some ways affecting the stability of the health status and body. In addition, quality of life was discussed to be a factor affecting the health status.

In addition, women focused on individual and social factors to affect health. Most women emphasized the concept of mental well-being and adaptation to a new environment and culture. Women also mentioned some other factors that affect health, such as nutrition, environment, exercise, social support and screenings. This gave the insight that women are aware of preventive methods regardless of the low number of them who obtained screening exams.

During the discussions, the topic of illness always came up. According to the lay theory model of illness causation[384], illness can be perceived as caused by factors related either to the individual (lifestyle, behavior, personality, bacterial invasion, inheritance, physical constitution, organ function), nature (chemicals, drugs, smoke, pollution), social relations (relations between people, interpersonal conflicts, people considered to possess evil forces) or the supernatural sphere (influence of fate, spirits, God/gods). However, in this study, the supernatural sphere was not mentioned to be the cause of illness in any of the held focus groups. This result could be opposite to what many think that Muslims in general view disease and suffering to be part of punishment or testing from God/Allah and should be accepted. Moreover, this is not in line with a study on Arab migrant women in Sweden with diabetes mellitus for example, who viewed illness to be as influence from fate[385], or another study on Turkish migrants in Germany[386], in which it has been found that most Turkish Muslim patients considered disease, sadness and death as things sent by God (Allah) as a test or a penalty.

The requirements for a healthy life were viewed among the focus groups to be as individual, social, spiritual and psychological items. This gives a kind of comprehensiveness to reach the optimal level of health; it was clear that women put both self responsibilities on themselves and social responsibilities on the community to be healthy.

Both in the focus groups as well as in the questionnaire, factors having negative influence on health among the majority of women were mental discomfort, feeling lonely, disrupted kin relationships, being occupied with thoughts about the situation in their home countries or their families away from them. Many reported “longing for home” and reported memories of familial events, the ways they lived, and things they experienced

when they were in the home country, especially on certain occasions like feasts or celebrations. Fantasies about home and returning home can be considered as "migrant's opium" or "sedation" to reduce the feeling of loneliness. Literature shows that individual beliefs are culturally determined and may affect health, self care and type of heath care sought and the degree of concordance[387].

The fact that only few health indicators are classified according to nationality status forms a shortcoming in the health system as was presented by the key informant interviewees. This could be reflected in two ways; either in the unmet needs of migrants, which seem to be increasing day after day, or by the concentration of few health projects on certain aspects of migrant's health, giving the impression they are different from the normal population. However, it is well-known that in planning health services, there is the need to have basic health indicators so that these services respond to the needs. The information from the health office in Cologne revealed that there is no statistics about health indicators in relation to migrants because all what is reported is done through family doctors, and in such cases data about the citizenship are not clear. If someone migrates to Germany and obtains a German passport, then it will not be clear if the data reflect the migrant or not. On the other hand, there are few indicators that showed classification between Germans and non-Germans on the state level, such as the NRW.
It is worth to mention that in the context of migrants' health, the topic of healthy migrant effect always arises. This effect had a major impact on many health and mortality data in the sense that in the migrant population even age-standardized and age-specific mortality rates were so low that it was impossible to offer a meaningful interpretation[388]. The phenomenon seems to remain stable: for example, the second generation of the Turkish population living in Germany does not show any signs of a downward tendency[389].

The fact that language barriers form a major difficulty both for care seekers and providers is in line with results of a study by a Turkish doctor (Ikilic, 2002) on Muslim patients in Germany. The study concluded that communication and language are the key items forming obstacles in understanding Muslim patients. The study also found out from

researching Muslim patients that feeling ashamed, religious duties and nourishment instructions are the main conflict fields in medicine in Germany[390]. This is also in accordance with a previous study on Arab women in Sweden[391].Women have a feeling of inadequate expression of their complaints and signs and symptoms to the health personnel, which then gave them the feeling that they receive less attention or are discriminated against.

Concerning the major problems faced by Arab migrants, different physical and psychological problems were mentioned to be common as either experienced by women or observed by key interviewees. Interestingly, main infectious diseases such as Tuberculosis or Hepatitis were not mentioned either by women in the focus groups or by health personnel in the key interviews to be major problems faced by migrants. However, it was clear that there was high concentration on psychological stress; these common views of care providers and care recipients who were both ranking psychological stress to have the highest frequency among other problems draw the attention to the seriousness of such problems. By the key interviewees, psychological problems were viewed to be the cause of many physical health complications, such as ulcers or back pain. Several factors were mentioned to be associated with psychological stress, such as isolation, homesickness, nutrition, loneliness, cultural differences or different value system, unemployment, weather and social problems, especially marital problems. In accordance with previous studies on migrants, anxiety and home sickness are frequent problems that easily become chronic when they are not treated or resolved, and can present serious implications for overall psychological wellbeing, including depression and psychosomatic functional disorders, such as stress related ulcers, migraines and disabling back pain[392]. Another point in this regard is that such problems could be related to the issue of limited interaction women have to the surrounding community or to the limited space they form around themselves; women might have the feeling of being foreign in a new country and have constant worry of being observed by native German citizens, and not ignoring the issue of language obstacles.

It was also clear from the focus groups and the interviews with women that there is a sense of identity change. Aketar (1999)[393] addressed four interconnected tracks of

identity change, which happen to immigrants in the process of acculturation. The first track involves immigrants' feelings toward both their country of origin and the new culture. The second, immigrants experience identity confusion caused by the distance between both their home country and new country and their native self-representation and newly emerging self-representation. Immigrants in the third track go through mourning phase as a result of separation from their own culture before they can have meaningful living in the present moment in their new country. Finally, in the fourth track immigrants become absorbed in a new culture.

Although women mentioned different sources of health information, physicians received high trust from women and were perceived to be the best source of information on health. Physicians in the key interviews also had the view that they are the best source of information on health. It could be that the unavailability of other sources that meet the needs of women is the reason for creating more demand on the first contact to patients, which is health staff (physicians) in this case. Physicians in the Arab culture are given high authority in deciding on health. However, in a study on Turkish migrants in Germany[394], patients were not satisfied with their treatment by German doctors and preferred to go to their home country for treatment. These patients stated that German doctors need machines for everything, while Turkish doctors can find the disease from just questions or looking. In their views, Turkish doctors tell the patients what diseases they have but German doctors ask patients to reach what they have. Health education materials were viewed to be very important in health awareness but language is a major barrier. If women read and speak German, they can use the German publications and media. But if not, women try to get the information from an Arabic source, such as Arabic TV satellite channels, Arabic books they bring from their countries or from the Arabic doctors they are treated by. The fact that there are no published health materials in Arabic language puts an additional burden on physicians who are viewed to be the best source of health information by patients as well as by themselves. Although there are materials developed on many health topics in German and they are accessible to all kinds of patients-in addition to some materials in Turkish, Italian or Russian-, the reality is that

not all generations master the German language, leading to important communication problems.

Women showed low health seeking behavior concerning screening exams and check-ups due to different reasons. The main observation during all the focus groups sessions is the lack of information about preventive screening activities as well as on health rights or new changes in the health care system; this was clear from the discussion on breast self examination or cervical examination. It is also possible that low self-efficacy prescribed by Bandura (1995)[395] may result in a decreased motivation to take active part in self-care, and in women concentrating on obstacles they face rather than on benefits that they could gain from health-seeking behavior. This was clear in the focus groups as women gave several excuses for not seeking health care, either related to them, such as self ignorance or being shy, or to the system such as long waiting time. Moreover, some of the current changes in the health care system pose a burden on migrant families, the introduction of co-payments and the need to sometimes pay special examinations out of pocket.
In the model for health seeking behaviors according to Kleinman (1980)[396], health can be sought in the popular, folk or professional sector. The popular sector comprises non-professionals in the family, among friends or relatives. The folk consists of folk-healers. The professional sector is the organized, legally sanctioned health professions, such as modern western scientific medicine. In this sample of the study, the formal organized source (clinics and health personnel) was the main source among women in seeking health and health information.

From the point of view of the key informants on the compliance of patients with treatment, most key informants mentioned that women are more compliant with curative health care than with the preventive methods, such as screening, diet or exercise. However, Arab patients in general and women in specific were reported to be more compliant with treatment than some other migrants. This study shows that it takes women sometime before they go to see a doctor when they are ill; they do not go just for a check up when symptoms start, but wait until they are seriously ill.

The finding of this study that migrant woman are less physically active than their German counterparts is compatible with a result of a study among Arab migrant women in Sweden[397]. Reasons given for not exercising were mostly related to women themselves, including not having the motivation to exercise, not planning time between their house work and time for themselves, and decreased personal self-care . Bad or cold weather was mentioned as another barrier to exercising and was also mentioned by both focus group members and key interviewees to be affecting psychological status. Research shows that the lack of sunlight during winter months may contribute to the onset of what is called Seasonal Affective Disorder (SAD) that is found to be common in Scandinavian countries and in the UK. This disorder affects the level of serotonin (a neurotransmitter involved in depression) in the brain, which can alter the mood[398]. Women in this study reported different signs related to this mood disorder, such as somatic symptoms, excessive sleeping, increased appetite and weight gain. A study in Denmark showed that women and younger people who had SAD were found to be much more sensitive to seasonal and weather changes than men and older people[399].

The fact that there is a shortage of culturally and linguistically appropriate psychological health services for migrants is a very important reason why women do not seek formal help. In addition, there is also the issue of stigmatization that was raised by the key interviewees. It is common in the oriental culture that the person who goes to a psychologist or psychiatrist is considered to be "mentally ill" regardless of the reason why the person goes. Thus, women avoid going to seek psychotherapy fearing they will be viewed of being mentally ill. Migrants live in a closed-knit social circle including a number of family members (if any) and some friends (mostly from the same home country); it could be that issues like seeking health care are shared between families, which create a kind of fear for women to mention seeking psychological help to avoid labeling of being ill. As it is culturally inappropriate to talk about problems with someone they do not know well, women prefer to talk-if they talk- to general physicians, gynecologists, and sometimes to their friends or family members rather than to professional personnel. The fact that many of these women have lived in Europe for a

relatively long time period did not appear to change their belief of stigma or their health behavior concerning use of counseling services. Cultural beliefs and the way how women were raised play a big role as well. Women in eastern cultures are taught to show "patience" to the difficulties they face regardless of type or level of those difficulties. Women are taught that they should not tell others about their personal problems; this in turn prevents women from talking even to their own family members in order not worry them. Women may confuse two concepts which are "patience" and "tolerance". Tolerance is defined as "the willingness to allow something that one does not like or agree on to happen or continue" or "the capacity to endure pain or hardship", while patience is defined as "the ability to accept annoyance or suffering without complaining"[400]. Women consider that the more they accept pain, the more patient they are perceived to be by others, although what women do in this case is not patience, and rather it is tolerance. The stress they experience may not only be related to difficulties accompanying migration, but also to marital problems (which women did not mention in the focus group discussions) or other factors. In case of marital problems, it is more common that women keep silent as they think that they are dependent on men who are the source of financial support. If women complain about difficulties they face in the new culture, men with their perception of having more power over women could threaten to divorce the wife, and this fear of loosing their financial support could create another type of stress for. This can lead to an accumulation of different kinds of stress inside women, and can create a state of high psychological distress or imbalance.

Additionally, previous research indicates that there are differences in the utilization of health care between migrants and native German population. In a study carried out in the city of Bielefeld in Germany (2004), Germans utilized health care facilities and preventive programs more frequently than migrants[401]. Moreover, many studies have shown that migrants under-use psychological or psychiatric facilities, which could be related to stigmatization of persons who receive such care in some cultures. Previous research among Arab women in Israel demonstrated low utilization rates of mental health services[402], which is consistent with the findings of this study. The study of Haasen et al (1997) in Germany also found that mental clinics are underutilized by migrants, either

due to cultural barriers or the fear of further stigmatization for subpopulation already burdened with racial discrimination[403].

The presence of centers and self-help groups among Turkish migrants in Germany, mainly in the big cities, suggests that they are more open to and integrated in the German community than the Arab community, although they are still considered outsiders by many Germans. On the other hand, it could be also true that the lack of resources and qualified personnel speaking the same language are the main obstacles for seeking care.

9.2 Open group discussion/public meeting for prioritization

Due to the unavailability of epidemiological data on health indicators among Arab migrants in Cologne, a qualitative method was used for prioritizing a list of identified health problems rather than a quantitative method. The literature recommends using qualitative methods in case of the unavailability of required quantitative information for designing an intervention[404]. In the COPC approach, deciding on the problem to be studied in detail needs the input from the community, and in this study, the open group meeting in addition to the focus groups and key interviews were the best opportunities to identify the main problem that migrant women face, which was high psychological stress.

9.3 Discussion of the questionnaire results

The findings regarding psychological stress among Arab migrant women in Cologne were enlightening.

9.3.1 Demographic section

58.6% of the sample was between the ages of 18-32 years old; this reflects that this age group as was received from the statistical office forms a major group. And as most of the Arab migrants who came to Germany were from North Africa, the biggest group of the sample was from the country of Morocco. Interestingly, a large percentage of the sample (56.1%) had a level of education above the 10^{th} class including women who had Diploma

degree (2-3 year study at a college) and Bachelor degree (4 years at a university), and referring to this study sample, this is opposite to the expectations that migrant women are poorly educated. Comparing the number of children that a family has nowadays to what it previously used to have shows that there is a trend to have fewer children. This could be a result of the economic situation and increased expenses of life in Germany or as a result of being affected by living in the German society which tends to have smaller families. Most women were housewives even the highly educated ones given the fact of few job opportunities.

9.3.2 Health status section

Most women suffered from diseases from which they had to seek medical care since they migrated to Germany, and fewer suffered from diseases the time they answered the questionnaire, but the percentage was high (33.6%).

An interesting observation is that both in the questionnaires as well as in the focus groups few women who were diagnosed with chronic diseases such as diabetes mellitus or hypertension mentioned that their symptoms only appear when they are in Germany and then disappear when they go back to their home countries. They mentioned even cases in which German doctors here were surprised that the symptoms are cured and do not even show in laboratory examinations; those physicians asked them if they went for any treatment in their home countries which was not the case. This shows the possible effect of the comforting environment and atmosphere, and the role of the psychological stability being in the home country with their families and friends on bringing better psychological status that is then reflected on physical health.

While the majority of women were satisfied with health care they received in Germany, 18.1% of the sample was either completely unsatisfied or unsatisfied with health care. Few women noted that their dissatisfaction was due to misdiagnosis of their family members, poor communication due to language problems, or feeling of being discriminated. Normally, patients want to have full attention from physicians and the health care team when they seek help and they put much trust in them. If there is a

misdiagnosis or any kind of mistakes, this trust will be affected negatively and in turn will affect satisfaction with care. One study in the Netherlands has shown that the Turkish and the Moroccan migrants show lower utilization of specialized health care[405]. The authors' analysis indicated that low social position partly explains the problem, and the suggestion is that the ethnic background may account for patterns of utilization.

Related to the point of discrimination as it was a major result from both the focus groups and the questionnaire, the trans-cultural psychology theory poses that racism causes mental illness both directly and indirectly. Research has found that migrants who were treated as inferior, hated, discriminated against, were more vulnerable to emotional distress rooted in early life[406]. According to Eisler and Hersen (2000)[407], racism can influence the pattern of health care use and mortality, and it can impact health in two ways:

a. Directly by limiting access to health-promoting goods and services, or by causing personal and psychological suffering.
b. Indirectly by exposure to race-linked conditions such as residential segregation, hiring, or labor market discrimination that affect health.

Racism and stigma are seen to be two key aspects of the current attitudes towards foreigners in receiving societies. Racism influences the way diagnoses are made and treatment pursued. Stigma is applied both to disease and foreigners: migrants are seen to be the originators of the problem, as well as one of the categories of people mainly concerned with it[408].

Health care providers have their own views concerning patients and this may be mainly related to cultural differences. In a study on Turkish migrants and German doctors[409], German doctors complaint that their Turkish patients did not correctly name their pain and describe their health problems.

Related to physical exercise, the percentage of women who did not perform exercise was high (77.6%). Regardless to the excuses that were reported either in the focus groups or as reported by physician key interviewees, physical exercise is not a part of migrant women's daily life activities. Being in a country where many opportunities are available

for physical activities, such as walking spaces in parks, cycling places …etc. in comparison to their home countries, this did not seem to change women's behavior to be encouraged to start exercise or to become active in this regard. It could be that younger women (third generation) who enrolled in schools in Germany have better engagement to exercise due to the effect of school programs.

9.3.3 Psychological status section

The high percentage (75.9%) of women who considered minority status (being a migrant) to negatively affect their psychological status is a very important result of this research. Psychological stress caused by being migrants appeared to be the major factor in the view of women to affect their health in different dimensions. Arab societies have been described as being group oriented cultures and societies[410], and this sample of women missed the social circle they used to have from family and friends in their home countries due to the reduced social network in Germany. Confirming findings from other studies show that the immigrant woman has to deal with different responsibilities in addition to the lack of social support, social isolation and alienation in a foreign culture[411]. There is a struggle that women have in themselves to face many difficulties in the new culture and living conditions. Moreover, cultural distance, which is manifested by differences between cultures in language, social structure (e.g. family), religion, standard of living and cultural values[412], may influence an individual's obligation to behave in a healthy way[413]. For women in our study, a state of confusion was present due to the confrontation of what they see in reality and what is present in their minds and perceptions.

Women highly stressed the fact that migration and its difficulties form a big load on their psychologies here. This could reflect the following:

- The different way of life and the feeling of being alone as a foreigner in a new country highly affect one's psychology.
- The issue of integration in a new community and society plays also a big role on the psychology and the feelings of the person.
- The importance of the role of family, friends and social network in supporting women.

Although migration may not threaten mental health, it could create a specific vulnerability and when its pressures are combined with added risk factors, mental health can be affected. Migration implies leaving behind a familiar environment for an unknown location with different values and traditions and challenges one's coping skills. Minority status is considered to be one determinant of health[414] and growing evidence has been presented that both migration status and low social status are independent risk factors associated with poor health[415]. The decision to move is often associated with fear of unknown, anxiety about those being left behind, and a sense of impending loss[416]. In a previous study on migrants' mental disorders in Germany (1997), it was found that 7.9% had their onset of illness before migration to Germany, 6.1% at the time of migration, and 85.4% after migration to Germany[417].

Moreover, in many ethnic and immigrant groups women are confronted by a complex set of problems related to social deprivation and conflicting value systems. They often come from traditional cultures and continue to live in families that continue to prize and expect traditional behaviors from them, even though they may be expected to work and live in post-industrial settings that do not value these same roles. The resultant ambiguities of identity and poor self-esteem can seriously impact health and the capacity to function[418].

Surprisingly, although women considered being a migrant as a major source of stress that negatively affected their psychological status, they had spent many years in Germany, and none of them mentioned any plans to permanently move back to their home countries. This may be due to economical reasons; most bread winners (men) are dependent on jobs in Germany and cannot find similar opportunities in their home countries. Another explanation for this willingness to stay may be that migrants in Germany receive various forms of social assistance as well as other benefits such as the health insurance, monthly financial stipend for children paid by the government (Kindergeld), unemployment compensations,…etc., and they will not receive most of these benefits if they go back to their native countries. Consequently, they may prefer to stay in Germany bearing different kinds of stress for the benefit of receiving these types of social assistances. Moreover, families who have children who are born in Germany

and attend German kindergartens and schools may find it hard to take those children back to the home country, as those children have mastered the German language and got used to the German system. Nevertheless, reports show that migrant students have lower school achievement and more language problems in comparison to the German students.

Another factor that negatively affected women's psychological status was that they felt lonely (frequency=58). This could be because most the women in this sample are housewives; their husbands spend most of the time at work and these women have a limited circle of friends and sometimes relatives in Germany. Language barriers could also be a factor for prohibiting women from participating in many offered public activities. Antonovsky (2001) argues that sense of coherence is a personal dispositional orientation towards oneself and the surrounding world, which enables the individual to find more adequate strategies to cope with internal or external life stress[419]. It could be that Arab women living in Germany do not have this feeling of coherence from the community. Migrant women lack one or all of the components that have been described as contributors of a sense of coherence. These components are: 1) comprehensibility: which is the ability to perceive and structure their individual's internal and external world to be understandable, orderly or consistent, 2) manageability: which is the ability of the person to perceive that he or she has the available resources to meet demands of these environments, and 3) meaningfulness: which is the extent to which the individual finds that the demands are challenging and worthy of personal investment[420].

Research shows that individuals who feel that they are part of a social system may perceive a greater sense of identity and meaning in their lives, which in turn results in more psychological well-being[421]. Moreover, being involved in significant social networks implies that it may reduce exposure to other risk factors such as loneliness[422].

Homesickness is possible to represent a more severe experience among individuals traveling between countries, as the distress may interfere with adjustment and integration into the new society[423]. And there is consensus that homesickness refers to a distress state accompanied by specific physical, cognitive, emotional and behavioral reactions. Such as sleep disturbances, gastric and intestinal problems, preoccupation or ruminative thoughts about family, friends and home, negative attitudes toward the new environment,

depressive mood, feeling of insecurity, apathy, and constant talk about home[424],[425]. Other studies have linked homesickness with depression and anxiety[426].

Women see dissolution of family relations to negatively affect their psychological health. Family problems mentioned by women consisted of marital problems between husband and wife or sometimes generational problems between children and parents. The main observation in this regard is that most women migrated to Germany through marriage; men who have lived and worked in Germany for many years go to their home countries to get married there and return to Germany with their wives. Women who come with their husbands most probably have a state of shock at the beginning and then a state of confusion as everything in Germany is new to them. Sometimes if the newly arrived women talk to women who migrated years before them, these long-term residents may tell the new comers that they passed through the same state of feeling confused or having problems at home and these feelings are normal and they will overcome them. It is important to note that each woman is different and has different coping skills, so there is no assurance that these feelings will go away after a certain amount of time. Moreover, there can be conflicts between parents about raising children. This conflict arises when parents compare the way they were raised or how children in their countries are raised and how they want to raise their children in Germany. It can be very difficult to find a compromise and to get acculturated to the way of life in a European open western society.

Additionally, as was clear from the focus groups and the key interviews, language incompetence forms a major obstacle for migrants. This issue was stressed again in the questionnaire section as being a factor that negatively affects the psychological status of women. Previous research has shown that the communication between health professionals and migrant patients is not only complicated by language barriers, but also by cultural misunderstandings[427]. Moreover, migrants' needs and expectations may not only be understood by health professionals due to language barriers, but also due to unawareness of values and beliefs related to the patients' cultural backgrounds. These diverging cultural expectations, especially when they are not apparent, can lead to tensions and misunderstandings, with negative consequences both for the professional

work and the patients well-being and service satisfaction. Research has also shown that although minorities are less likely to use mental health facilities, they are less likely to drop out of care prematurely if the care providers share their language and ethnicity[428]. Other research showed that language problems are correlated with misdiagnosis and higher rates of psychiatric disorders[429], and other studies like in Denmark showed that delayed gynecological and obstetrical care seeking for women migrants and refugees is related to language problems and poor communication with healthcare staff[430]. Access to and use of health care services has been shown to be influenced by the trans-cultural skills (or lack of them) of health care staff and the availability of interpretors in clinics[431], [432].

Our questionnaire results demonstrate that some women saw the difference in culture and inability to adapt to it as a stressor. This is similar to findings of Al-Sabiae and Dinicola (1995)[433]; they found that cultural change is a stressful process that is associated with higher risk of both mental and physical health. They used the SCL-90-R on about 200 Saudi students and spouses in Canada, and one third of the sample scored high on the SCL-90-R. Some women may experience cultural shock, which is seen a crisis of personality or identity as a result of contact with an alien culture and being away from all the familiar bases of one's self[434]. The "U-shaped" adjustment curve associated with five stages of cultural shock describes a similar process to cultural identity development described by Pederson (1994)[435]. The first stage is called the "honeymoon stage". A person in this stage is excited about the new environment and new experiences. The second stage begins when the person cannot ignore cultural differences anymore, and the person experiences isolation, inadequacy, and loss of self-esteem. In the third stage the person becomes angry and rejects the new culture to protect his/her self-esteem. During the fourth stage, the person begins to recognize similarities and differences between his/her native culture and the new culture. The fifth stage leads toward a bicultural identity that includes competence in both old and new settings.

To manage life in a new environment generates further stressful experiences for migrants and requires the person to activate his or her coping resources. Individuals receiving less social support and less social integration tend to develop a lower self-esteem due to

shame or embarrassments. This is consistent with Sarnoff and Zimbardo's finding[436] that persons threatened by the prospects of engaging in embarrassing behavior prefer to stay alone rather than in the company of others. According to Hovey and King's study (1996), acculturative stress was positively correlated with depression among immigrant and second generation Latino adolescents[437].

The issue of adaptation plays a role in the migration process. Adaptation refers to changes that take place in individuals or groups in response to environmental demands. These adaptations can either occur immediately or be extended over long time which causes more stress. This process is sometimes accompanied by a sense of alienation which can consist of sense of powerlessness, purposelessness and conflict, sense of social isolation, meaninglessness and self-entrapment[438].

Acculturation, which is marked by physical and psychological changes due to the adaptation required in diet, climate, housing, interactional styles, norms and values of the new society[439]. The degree of acculturation depends on language, culture and timeframe of immigration to a new country[440]. If there are great cultural and linguistic differences between migrants and natives of the host country, it is reasonable to assume difficulties in the degree of acculturation of women. Learning new behaviors requires change and may be accompanied by some moderate "cultural conflict", which may cause the individual to experience "acculturative stress" if they cannot easily change their behaviors[441]. There is a potential interaction between acquisition of the host country's language and acculturation strategies that foreigners use. Inability to communicate with members of the host culture inhibits foreigner's interaction with people in the host culture and that may hinder their ability to assimilate to the main society.

Cultural differences may promote different self-efficacy appraisals. In this regard there is the term 'dependent collectivism', with which there is a high degree of power distance and hierarchical relationships and more obey to the authority. Societies in the Middle East have been described by Hofstede[442] as being more based on dependent collectivism. Moreover, Islamic countries have been described as being bureaucratic with a large power distance and strong uncertainty avoidance, which is contrast to the European

countries. This could be a reason for the state of confusion that migrants coming from Middle Eastern or Islamic countries may face when they come to Europe.

Another important concept related to this section is "assimilation" which refers to the process by which minorities gradually adopt patterns of the dominant culture[443]. It was clear from the discussion groups and also from the questionnaires that women had fear that their sons and daughters will adopt what they considered negative behavioral patterns.

Consistent with previous studies and findings[444], [445], the cumulative life changes had a major impact on women's psychological distress. It could be that the presence of stressors engenders stress and as a result women become unable to manage the difficulties and crises they face. Women reported that one of the stressors is the dissatisfaction with their life in Germany. Previous studies have corroborated life satisfaction with psychological well-being[446], [447]. Comparing the daily life in the home country and in Germany is worthwhile. Women in home countries have a certain rhythm of work all during the day either at home, outside or both, including the housework and taking care of children, parents …etc. This encompasses social visits which are considered as an important part of family duties. On the other hand, the smaller social circle in Germany and the modern appliances for cooking, washing and cleaning, and the European consumption pattern adopted by Arab families living in Germany reduce women's workload. This results in excess leisure time that is mainly spent indoors, with no meaningful activities. Whereas these women went out freely in their countries, they are now confined to their small apartments, partly because they could be disoriented in an environment that is new to them, or because of the traditional role that a woman should take in an Arabic culture. And if they go out, it is always to the same circle of family members or women from the same country in specific or from Arabic countries in general, or for minor activities such as shopping or certain appointments. In other few cases in which women have the chance to work, they have double workload that is inside and outside home. Husbands do not share the household duties and the responsibility of the children's upbringing and running the home is almost entirely borne by women even if they work outside the home.

Our study shows that women ask for help when they are under stress from different sources mainly family members or friends, but they shy away from the formal counseling of psychologists or psychiatrists. In contrast to Western individualism, people's interests unite with those of their family and extended family, and the general good supersedes the personal[448]. When a person has a problem or experiences stress, all the family members try to pursuit solutions, and in case this person does not have family members closeby, he/she tries to contact friends from the same culture. Help seeking is a collective enterprise, and Arab people tend not to equate personal, familial or interpersonal conflict with psychopathology[449] nor do they seek professional help in these instances[450], so women in this case are less motivated to seek treatment at a psychiatric place or they tend to delay seeking treatment. Different studies found that social support has a protective, buffering role to face stress and this is consistent with previous studies on individuals in general[451], and among migrants in specific[452],[453]. Cohen (1988)[454], found similar results; he suggested that those individuals who take part in a social system such as a family might have the possibility to perceive a more developed sense of identity and meaning in their lives, and therefore suffer less frequently from psychological disturbances[455].

Women show weak methods of coping with stress including crying. Some others talk to someone or walk from stressful situation. Encouragingly, only one woman answered that she smokes when she is under stress.

Many women in our study mentioned spiritual/religious methods to deal with stress including supplication, praying, praising Allah/God, listening to or reading the Koran (Holy Muslim Book). Those were considered to be of great importance and major coping mechanisms to give feelings of peace, security and strength. Although there is lack of literature on the effect of religious activities and psychology, some studies suggest that Islamic practices bring about peace of mind and soul apart from giving physical relaxation[456]. Similarly, a study on female Arab patient women in Sweden[457] found that religion or religious beliefs decrease the likelihood of breakdown during psychological distress[458],[459]. According to the stress model of Thomas and Wimbush (1999), spiritual factors play a role in reducing stress experience[460]. Moreover, praying was reported to be a major method for dealing with stress among women. Research shows that this feeling

of being at ease after praying comes from the following: During his five daily prayers, a Muslim does not concentrate all his attention on the realization of the divine nor does he indulge in any movements which distract his attention or disturb his prayer attitude, accompanied by a recitation from the Holy Koran speaking of divine love, mercy power and knowledge. Prayer reflects the whole nature of Islam attitude to life, mind, body and soul and that they are in harmony and no conflict between them. In prayer, one feels the presence of the deity and communicates directly with God/Allah. The brain is not absent intellect and one should think about what he says. Prayer disciplines the soul; strengthen the spirit and the gain of courage and steadiness. Obviously, both in physical and in mental state, prayers have a very strong effect on improving psychology[461]. Other studies show that Islam is a religion and way of life which could explain why women turn to religion to ventilate their stress. Islam deals with despair by promoting internal harmony, hope, patience, security, balance between body and soul, the material and spiritual parts of the personality establishing equilibrium between them[462]. People are made of body, mind and soul; each of these components has its essential needs. The body has its crucial needs that must be satisfied in order that the human can live and survive. The soul has its intimate needs that express themselves. In Islam, Muslims believe in a spiritual longing for believing in Allah (God), to be God conscious, loving Allah, having trust in Allah, believe in Him and worshipping him. Satisfaction of these spiritual needs determines feeling of security and happiness[463].

Most of the women (98.3%) reported that their nutrition is negatively affected during stress. This was reported to have either excessive or less amount of eating, though observation showed that women tend to be overweight. Different studies showed that when a person is under stress, the hormones in the body are affected and in turn the metabolic processes and appetite are affected, and the reaction could vary from excessive to less eating[464].

Most women reported that they felt positively after visiting their home countries, and even the ones who had chronic diseases reported either the decrease or disappearance of signs and symptoms of their illnesses. As discussed earlier, this shows the importance and the buffering effect of social circles of family and friends on the psychological well-

being. When women return for visits to their home countries, the feeling of homesickness goes away and women resume their traditional life rhythm and routine that they were used to including the surrounding atmosphere, language, weather and habits. This may give them a kind of psychological peace and security.

The main type of activity that women did in their free time was watching television. Women reported watching Arabic satellite channels. Although language is a main reason for this, there may be other factors related to feeling closer to their culture and society, feeling connected to their roots and keeping up with development in the home country. Reading was the second major activity. This suggests the importance of designing reading materials as part of the intervention step later in the research. Physical activities were not among the major activities that women did in their free time. There was for example only one woman who went swimming and ten who said they exercised. This suggests the importance of including physical exercise as part of the intervention program.

9.3.4 Women's SCL-90-R scores

The analysis using one sample t-test shows that this sample of Arab women had scores on the items of somatization, interpersonal sensitivity, depression, anxiety, phobic anxiety, hostility, psychoticism and the three global indices (GSI, PST and PSDI) that were significantly higher than the mean scores in the normative sample.

Research has shown that different levels of stresses can have different affects on the body. Short-term stress can produce a feeling of nausea, rapid breathing, tense muscles, faster heart beat, and diarrhea. Stress can also make it difficult to make decisions, can promote negative thinking, and reduce enjoyment of doing things. On the other hand long-term stress can lead to tiredness, pain, colds, increased body weight, insomnia, and mood changes[465].

Based on the questionnaire data, women related their present complaints to the difficulties encountered in the host country (Germany) and felt that their symptoms had either started or were exacerbated by their lives as migrants. As mentioned by Carballo

and Seim (1996) : *"The cultural shock that often accompanies initial contact with a new socio-cultural system can be psychologically complex and far more than the simple negation of access to local and social services. Social integration and then acculturation is a complicated process involving linguistic, social, cultural, and conceptual transference processes that can denude migrants of everything they have previously been used to and which may have provided the basis for their identity. The migration of people from rural and often very traditional communities to major industrial cities can involve a confrontation of very widely different values, expectations, and ways of life. It is a process filled with psychological and psychosomatic problems which have remained poorly understood and even less well addressed by receiving countries"*[466].

According to the stress model that was presented in chapter six, one could argue that the different sources of stress lead to several changes that affect the individual's characteristics. This in turn leads to signs of high stress manifested by some of the SCL items. If these stay for an extended time and are not treated, different physical diseases (such as Coronary Heart Diseases) or psychological and mental illnesses will affect the stressed person.

It is of great interest to compare the SCL-90-R scores of women in this study to another study on Palestinian women which was carried out in 2004 and used the SCL-90-R as a method of measuring stress[467]. Table 59 shows that migrant women in Cologne scored higher on somatization, interpersonal sensitivity, depression, anxiety, GSI, PSDI and PST dimensions compared to the Palestinian women. One might expect that women in Palestine will score higher on SCL items than migrant women in Germany because they are exposed to many different types of stress such as political conflict, killing of family members or relatives, home demolition, economical stresses due to unemployment, high family demands due to large families and lack of different health care facilities including the psychological counseling. Thus, it is surprising that migrant women living in a comparably comfortable life in Germany scored much higher on different dimensions of the SCL-90-R instrument. One explanation might be that it is not the materialistic items (such as facilities, technologies…etc.) that bring psychological stability, rather psychological security and social relations. It was clear from the focus groups, the key

informant interviews, and the open questions in the questionnaire that women feel lonely and miss their families, friends, social network and way of life of their home countries. Regardless of all the comforts migrant women have in Germany, their psychological well being is highly influenced by the stressors of the migration process itself, the loss of their traditional life style and the loss of social support they used to have in their own home countries.

Table 58. Comparison between Arab migrant women SCL mean stress scores with Palestinian women scores and the normative sample scores

SCL-90-R items	Normative sample		Arab women in Cologne		Palestinian women	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Somatization	0.36	0.42	1.26	0.77	0.62	0.65
Interpersonal sensitivity	0.29	0.39	1.4	0.76	0.66	0.62
Obsessive compulsive	0.39	0.45	0.36	0.34	0.79	0.71
Depression	0.36	0.44	1.44	0.83	0.86	0.71
Anxiety	0.30	0.37	0.69	0.67	0.67	0.68
Hostility	0.30	0.40	0.37	0.48	0.67	0.62
Phobic anxiety	0.13	0.31	0.38	0.59	0.54	0.58
Paranoid ideation	0.34	0.44	0.33	0.49	0.62	0.68
Psychotisism	0.14	0.25	0.20	0.34	0.37	0.54
GSI	0.31	0.31	0.81	0.44	0.70	0.54
PSDI	1.32	0.42	2.34	0.55	1.85	0.64
PST	19.29	15.48	30.27	13.1	32.30	17.96

Women in this study had very high scores on somatization. The signs of somatization on the SCL-90-R include headaches, dizziness, heart or chest pain, low back pain, nausea, muscle soreness, breathing problems, difficulty in breathing, numbness in body parts, lump in throat, hot or cold spells, weakness, and heavy feelings in arms or legs. The migrant literature shows that migrant patients tend to somatize psychological problems[468]. This finding is in line with other studies where high frequencies of somatic complaints have been found in migrant populations[469], particularly Arab women[470]. As Racy points out in a study on Saudi women (1980) *"negative feelings, unhappiness and conflict, both within herself and between her and members of her family are readily translated into somatic terms, since physical symptoms in that culture are safe, culturally acceptable, and generally lead to some form or help-seeking"* p. 213[471]. In accordance

with another study on Turkish migrants in Germany, there have been reports of high rates of somatic complaints such as "tightness" (muscular pains, chest pains, shortness of breath, chocking sensations) and anxiety[472].

As for interpersonal sensitivity, the responses to this section included feeling critical about others, feeling shy or uneasy with the opposite sex, being easily hurt, feeling others do not understand you or are unsympathetic, feeling that people are unfriendly or dislike you, feeling inferior to others, feeling uneasy when people are watching or talking about you, feeling very self-conscious with others, feeling uncomfortable about eating or drinking in public places.

The uncertainty affects the spontaneity of migrant women. Most people automatically know how to react in certain situations, but migrant women feel that they are always observed by the native population. They are unable to use this automatization skill to the same extent and are more self conscious in many situations, which increases the feeling of stress. All but 7 women out of the 116 scored above the normal range, indicating that this is a serious situation. Other European countries, such as in Sweden, Denmark and the UK have stronger integration policy than in Germany. Migrants in Germany have remained a foreign element and seem to have met more hostility than in the Scandinavian countries[473]. Migrants are also observed to be more reluctant and anxious of authorities, which add to the feeling of insecurity.

Depression is a major problem among migrant women. 106 women out of the 116 women in our sample scored above the normal range on depression. Women reported crying easily, feeling low in energy or slowed down, loss of sexual interest or pleasure, thoughts of ending life, feelings of being trapped or caught, blaming self for things, feeling lonely, feeling blue, worrying too much about things, feeling no interest in doing things, feeling hopeless about the future, feeling everything is an effort, feeling of worthlessness. This finding of higher depression among migrant women is consistent with previous findings on women's symptomatologies trans-culturally[474]. Both depression and anxiety are frequently observed within Arab societies[475]. Moreover, depression and anxiety may reflect ethno-specific tendencies to avoid and or delay mental

health treatment[476]. Additionally, in line with this study, focus group discussions with Muslim community leaders at a multicultural center for women's health in Australia identified that many women from Islamic background suffer from various degrees and forms of depression[477].

Moreover, being divorced and dissatisfaction with life in Germany may be disempowering, stressful and provide little opportunity for women to make their own choices[478]. The notion that women of minority background, especially those who are new to a country, are more vulnerable to develop mental health problems such as depression is important; this could be in relation to social isolation, language barrier, and social role discontinuities[479].

The high scores on anxiety and phobic anxiety items include nervousness or shaking inside, trembling, suddenly scared for no reason, feeling fearful, heart pounding or racing, feeling tense or keyed up, spells of terror or panic, feeling so restless, the feeling that something bad is going to happen, thoughts or images of a frightening nature. As for the signs of phobic anxiety, these included feeling afraid in open spaces or on the street, feeling afraid to get out of your house alone, feeling afraid to travel on buses, subways or trains, having to avoid certain things, places or activities because they frighten you, feeling uneasy in crowds, such as shopping or at a movie, feeling nervous when you are left alone, feeling afraid you will faint in public.

In line with this study, a study on the health and well-being among migrants living in Sweden reported that migrants had higher levels of anxiety and depression and body pain as well as lower levels of general health, social and emotional functioning, satisfaction with physical health status, family contacts, housing conditions and economic status than natives[480].

When women were asked about the things that negatively affect their psychological status, they mentioned anxiety about the future. They frequently expressed fear over their children to be raised in a different culture than theirs, as well as changes in Germany's health care system that were rapidly implemented and had a financial impact especially for a large family. This financial burden was especially worrisome if more than one

family member would get ill at the same time. The women's feeling of being powerless to determine their own lives given the male dominance in the Arab society, coupled with their low level of information about the host country resulted in anxiety and stress.

Less than half of the sample had the signs of hostility on the scores. The reported signs included feeling easily annoyed or irritated, temper outbursts that could not be controlled, having urges to beat, injure or harm someone, having urges to break or smash things, getting into frequent arguments and shouting or throwing things. These reactions can be explained as the ventilation of inner stress feelings to either people or the outside environment items.

As for psychoticism items, there were high scores on the sub-items of feeling lonely even if when being with others, not feeling close to someone else and the admission that there is something wrong in their minds. Although women tried to socialize on certain occasions, some felt lonely even if when they were with others, or did not feel close to someone, which shows how isolated they are.

Associational statistical results of different variables with SCL-90-R items and indices

The socio-demographic variables had different patterns of correlations with women's psychological stress scores.

Age was positively associated with somatization and PSDI index. The fact that older women had more somatization can be explained in two ways. Coping with life in Germany can be harder for older women. The other factor is related to language. It may be that younger women who seek medical help can better explain their feelings and symptoms in German language. Older women who usually have poorer language skills may be less able to express their complaints themselves or through a companion who translates which can lead to a misdiagnosis. This in turn can affect one of the indices of the SCL, in this case the Positive Symptom Distress Index (PSDI). This finding provides strong support for the powerful associations between socio-demographic characteristics and people's psychological status that was found in previous studies[481],[482],[483].

There were different negative correlations such as education, length of stay in Germany, and type of work with SCL scores. For example, lower education level was associated with higher psychological distress in studies by Glesser et al (1981)[484] and Lopez-Ibor et al (1981)[485].

The fact that women from North Africa had the highest mean scores of stress in ANOVA test is an important result. From the focus group discussions, it was observed that women from these countries are less social with others; less educated and reported poorer German language skills. Moreover, the psychological and social counselors in the center reported their observations that women from North African countries have more marital problems. They stated that these women reported that men pay less respect to them and do not allow them to participate in social activities. Those countries in comparison to other developing countries from the Middle East are known to be poorer and more conservative (mainly Morocco and Algeria). All these facts may explain the fact the women from North African countries have higher stress scores.

This study found an association between marital status and psychological stress. Previous research has documented marital strain among immigrant couples, particularly as it relates to employment status, spousal roles, and parenting responsibilities[486],[487]. The fact that divorced women had the highest mean scores may be due to the increased responsibilities they have to shoulder. Apart from the stress that stems comes from the "oriental" society's negative view of divorced women, taking care of children and family responsibilities without the help of a partner can result in additional stress.

The fact that having more children increases stress was shown in the increased mean scores for somatization and the PSDI index. There is no doubt that a woman who has six children will have much more stress than the woman who has only one or two. Moreover, in the oriental society, it is rare that men support women in taking care of children. Women discussed this point in the focus groups when they were asked what they do in their free time. Married women having children said that they do not have free time as they have to take care of children, home, cooking, and other house work.

The negative association between the length of stay in Germany and the interpersonal sensitivity is worthwhile to notice. The items in this section included different responses,

but the most interesting are: feeling that others do not understand you or are unsympathetic with you, feeling that people are unfriendly or dislike you, feeling inferior to others, feeling uneasy when people are watching you or talking about you, and feeling very self-conscious with others. It is possible that these feelings diminish as women are residing in Germany for a longer time period and as they get used to the new society. Among recent immigrants, the response value may be especially high as they are still trying to adapt to the new environment, which in turn increases the score on the SCL for this item.

Being a housewife without an additional job was associated with high psychological stress scores. This result is consistent with the social psychological perspective on the importance of the conditions that people confront as they occupy their various positions and statuses in the society for psychological well-being[488], [489]. Because housewives shoulder most of the responsibilities of the house and children during the absence of the husband at work, they may feel the stress more in addition to suffering from social isolation. Moreover, migrants and members of ethnic minorities are rarely employed in the public service. Although there is a project 'Equal opportunities for migrants in the public service' that is implemented since 2002[490], it may be that the low participation of women in work fields even if they are educated enough, is because of either the pressure toward keeping traditional sex roles, or other factors such as age, incompetence in German language or the high number of children.

The above mentioned association findings provide strong support for the powerful association between socio-demographic status and people's psychological status that was found in other studies as well[491], [492].

The significant associations either positively or negatively between health variables and SCL stress scores are an important result. Having a history of being ill since migrating to Germany or being ill while completing the questionnaire had significant associations with various SCL dimensions and indices. This suggests that physical illness creates stress that can be reflected sometimes in psychological symptoms. Moreover, the different kind of worries for women being in a different environment affects both physical and

psychological well-being. For some women, the illness is more severe due to the fact that they are away from their traditional social network that could take care of them.

The negative association between exercise and high scores of stress is a very significant result. It suggests the importance of physical exercise in reducing stress as was found out in previous studies[493]. Moreover, the negative correlation between age and exercise which means that younger women exercise more than older women shows the possible shift of the trend from being less active to more active among younger women. This could be related to the school sport programs younger women were exposed to. Older women usually give the excuse that they do all the house work which they consider to be enough exercise. Awareness on exercise and its benefits on the body seem to be very low among this group of women.

This study found that a strong feeling of discrimination is correlated with high dissatisfaction with health care. The causes of dissatisfaction were related to the type of treatment, misdiagnosis sometimes or the style of communication that patients experienced when they sought health care. A previous study in Germany showed that migrants in Germany are less satisfied with care in comparison to German citizens[494]. This study suggests that feeling discriminated can contribute to not seeking health and in turn to having a higher psychological stress among women here.

The results of this study support the evidence that feeling negatively being a migrant and its accompanying stressors are associated with higher levels of psychological stress, and the significant role of cultural and social intervening factors on that stress. Being a migrant itself entails the main stress women had as 88 women (75.8%) of the sample responded with ‘yes’ when they were asked if being a migrant affected their psychological status negatively. This could be explained in different ways. Women may have the feeling of being uprooted from their home county and being placed in an unfamiliar environment. Women may also have had different expectations about living in the West before coming to Germany; most people in the oriental countries think that life

in the West is easy and they start to build their own dreams. But if these predictions and expectations turn out to be incorrect or not quite as positive as expected, this can result in stress, cultural confusion or even shock. Women who came from Arab Muslim countries that are considered to be pre-industrialized and conservative found themselves to be in a country (Germany) regarded to be as one of the most advanced, and free countries. They are exposed to stress due to the lack of predictability of their new environment and due to not knowing the implicit structure of society, the rules of behavior or even the timeframe of how events take place. It was obvious from the answers of women that they feel uneasy when they see, hear or experience things in Germany that are unaccepted by their own religious Islamic rules. This continuous uneasy feeling is a leading cause of stress on the long run.

When multiple regression models were performed to check which variables are highly associated with the three indices of the SCL, the highest association of the variables was with the GSI score index and the best model of association was the one that included having an illness since migrating to Germany, being ill the time of completing the questionnaire, and feeling negatively about being a migrant. The adjusted R squared value was 0.21, which indicates that 21% of the variance in the GSI score was explained by that model. As for the PST index, the best model was the one that included having an illness since migrating to Germany, and feeling negatively about being a migrant. The adjusted R squared value was 0.19 which indicates that 19% of the variance in the PST score was explained by this model. Finally with relation to the PSDI index, the best model was the one that included age and feeling negatively about being a migrant. The adjusted R squared value was 0.11 which indicates that 11% of the variance in the PSDI score was explained by that model. According to Cohen (1988)[495], these are medium effects. It is important to note that age, health and feeling negatively as being a migrant variables had the highest associations in those indices, which suggests their importance in relation to having more stress among women.

Predictors for being a stress case on the SCL instrument

Binary logistic regression models were carried out to determine the risk factors for having high stress scores among migrant women, which could be considered as predictors for being a case on the SCL instrument.

Results of this study show that some demographic variables, feeling negatively about being a migrant and health variables are significant factors for predicting being a case on SCL. This confirms findings from another study among women who had migrated from the Former Soviet Union to the USA that leaving family and relatives behind in the home country and feeling negatively about that predicted greater stress for women[496].

The best model for predicting being a case on the SCL instrument using the median as a cut point was the model that included being ill while completing the questionnaire, shorter duration of stay in Germany (<15 years), and feeling negatively about being a migrant. The accuracy of that model was 66.4%, positive percentage 79.3 and negative percentage 53.4 with a P value <0.05 for the included variables. When other variables were either removed or added, the accuracy level of the model changed and the P values were >0.05. It is also important to stress that the independent variable of feeling negatively about being a migrant was highly significant in all the models that were carried out with a P value <0.01. These variables could be used in for developing a quick time-saving screening instrument for detecting being a stress case, which could be used either in referring cases to specialized care or treating those cases by providing counseling services.

9.4 Intervention and evaluation

The fact that very few activities in Germany focus on Arab migrants is obvious, which makes it so important to develop an intervention program using both physical and cognitive methods. The intervention activities addressed different aspects of the problem and the team played a key role in the implementation of this step.

The intervention program with all its activities stressed the concept of participation among the team and women. The involvement of the center and the clinics to apply different activities of the intervention program had very positive effects. The descriptive part of the participants showed no specific characteristics that could show selection bias for the women who agreed to be part of the intervention program.

The evaluation of the effects of the intervention program using the paired samples T test showed significant decreases in the stress scores. This decrease in psychological distress as an effect of an intervention program is consistent with a previous study in the Netherlands that used physical as well as cognitive methods among people who had psychological complains[497]. In accordance with Benson et al. (1975), exercise may be a form of meditation that triggers a more relaxed state or a form of biofeedback that teaches people to regulate their autonomic arousal[498]. On the other hand, cognitive methods, including health education sessions showed an effect on reducing stress as well; Barkham and Shapiro reported a reliable and clinically significant improvement for mild depression after only two sessions of cognitive interventions[499]. A large number of education sessions may result in a greater effect. Van der Klink et al. (2001)[500] stated that on average 7 sessions are needed for cognitive interventions to have a large effect on complaints such as anxiety and depression. Similar effects are found for relaxation programs and physical exercise[501]. Related to the issue of the cognitive approach is the work of a famous Muslim philosopher Al-Ghazali in his book "Revival of Religious Sciences" (1096 AD), in which he had different sections on how one can deal with stress by training the self and the heart on good deeds, deep thinking and neutrality[502].

In addition to this, the regular attendance of women to the sessions and the high percentage of printed material that was distributed suggests that the intervention was well accepted by women and created additional activity at the center that was well received.

9.5 Strengths of the study

This study had the following strengths:

- This is the first study in Germany among Arab migrants and the first in Europe to use the COPC approach to study migrants' problems.
- The study used both qualitative and quantitative methods that complemented each other to obtain in-depth information about Arab migrants and their problems.
- The COPC approach consisting of six step cycle allows studying a health problem from different angles using different sources. This approach included collecting information about migrants from primary sources, which are migrants themselves in addition to key informants, and people who work and interact with migrants.
- The involvement of the community itself was a unique experience that enriched the study. It empowered women to make decisions about their own health and showed them ways to improve it.
- Moreover, the fact that the researcher and the sample of the study shared the same gender, language and culture facilitated several parts of the study and helped to get in-depth data. All information was collected from women in their own mother tongue language in a congenial atmosphere, and with respect and understanding for their cultural background. This increased the likelihood of obtaining valid and reliable data on which a discussion of the situation of Arab migrant women in Germany can be based.
- The use of geographical retrofitting confirmed that cases in this study came from different parts of the city of Cologne and not only from areas surrounding the center. This increases the generalizability of the study.
- Finally, having the center as the basis for the study and the participation of the team in the various steps of the study provided great support and facilitated the implementation of this study.

9.6 Limitations of the study

Findings of this study must be interpreted in relation to the following limitations:

- As with all nonrandom samples, a convenience sample may influence the findings through self-selection bias. It may be that women who participated in this study were different from those who did not volunteer to participate with respect to their interest in health issues, education, lengths of stay in Germany, level of stress, or other variables.
- The small sample size and the fact that all women were recruited at a single community setting limits generalizabilty of the findings.
- Although data were collected anonymously and women were assured that no individual results would be published, social desirability bias may have influenced statements made during the focus groups' discussions as well as the questionnaire responses[503].
- Since there was no control group in this study, one cannot exclude the possibility that factors other than the intervention contributed to reducing stress scores at post-test. However, no such factors (for example a visit to the home country) have been observed during the study period. In addition, given that only 2 ½ months passed between pre- and post-test, it is unlikely that many events took place that improved psychological status of the migrants who participated in this study.
- Since there were significant reductions in the post-test stress scores of women who participated in the intervention program, self-willingness to participate in the intervention activities, and the absence of a control group in this study, one cannot exclude the occurrence of regression toward the mean phenomenon. However, the low response rate to participate in the intervention program by women limited using a control group in the intervention program design.
- The intervention part of this study was delivered as a package consisting of relaxation techniques, exercise and health education sessions. Thus, no conclusions can be drawn regarding the effectiveness of the individual components of the intervention. However, this is a common and acceptable approach in a pilot study such as ours. That tests an intervention for the first time in a population.

It was previously mentioned that the COPC approach is feasible in different settings including clinics. When planning a COPC study in a clinic setting, the following observations may be of interest:

- Germany has no gate-keeping system; instead patients are free to select a sickness-fund-affiliated doctor of their choice. Since there is no mechanism to control or reinforce this selection process, patients frequently choose direct office-based specialists. This means that patients are not registered/centralized in a certain clinic or health center (not pooled), which makes it hard to track them and to find a representative sample for a study using the COPC approach.
- The organization of primary health care in Germany is much more complex than in other countries, partly because of the traditional sharp separation between hospital and ambulatory care, and partly because the latter is provided by both general practitioners and specialists, with freedom of access and referrals between them.
- The interrelationship of public health services to other health care facilities has been described as poor in Germany,[504] which could be an obstacle in implementing COPC. Local public health offices provide services, such as social and psychiatric services, family services, mother and baby care and school health services free to everybody regardless of the insurance status[505].
- The fact that the COPC approach is not well known in Germany and given it is very time consuming might be a barrier to its implementation that should be considered during the planning stages.

In summary, this chapter compared the results of the study with findings from other migrant studies reported in the literature. The chapter also discussed the strengths and the limitations that the study encountered in its application.

CHAPTER TEN

10 RECOMMENDATIONS

Psychological stress is a public health issue that could lead to mental health problems in severe cases. On the other hand, this problem can be prevented by first identifying potential causes of stress, and then dealing with stressful situations using healthy coping skills and mechanisms.

In Germany, which is home to migrants from many different countries, problems associated with migration can be a burden on the country. This rising proportion of the migrant population has made the study of migrant health and their utilization of health care services an important public health issue.

This study used the COPC approach to provide a description of the level of psychological stress among Arab migrant women in Germany and factors associated with it. It is also pilot tests the effect of a COPC guided intervention to reduce high stress levels.

Results of this study lead to recommendations for planners and policy makers, service providers, institutions working on migrants' issues, community/women/media, researchers and future research.

10.1 Planners and policy makers

The government has the highest potential for developing sustained and effective intervention programs and has a critical role in leading the way given the financial and human resources at its disposal, the existing infrastructure and the mechanisms to implement programs. The successful implementation of programs requires strong political will and concerted commitment from the Federal Ministry of Health. This in turn implies a change in the political culture surrounding the treatment of migrants' problems. Despite the magnitude of the migration process now underway, many European countries

have been relatively unprepared to deal with it and few have formulated policies needed to make immigration a healthy and productive process[506].

The following are some actions that can be initiated at the governmental level towards dealing with migrants' problems in general and with psychological stress in specific:

- **Collection of data on migrant:** There is an urgent need to collect data on health and health related factors among migrants. The lack of data on health status, use of health care services and attitudes and perceived discrimination in ethnic minorities limits the knowledge about the burden of poor health and the possibility of prejudice in health care. It is necessary to collect these data not only at the state level but also at the city level for effective responses to identified needs.
- **Formulation of a policy on migrants' issues:** It is sometimes true that prevention may depend more upon public policy than upon programs. Policymaking is a government function, though considerable inputs are needed from various interested groups for policies to gain acceptance and have a chance of successful implementation.
- **Raising awareness in host countries of migrants:** Training is necessary in host countries where public facilities, schools, hospitals and authorities, including migration officials, may be unfamiliar with the past experiences and cultures of migrants, and substantial language barriers that may exist. As a result, there may be misdiagnosis and that the treatment is not necessarily appropriate to the condition, which may result in resistance to the treatment. In this case, it would be important to work with representatives of the community of origin who can serve as 'cultural mediators' and or counselors.
- **Effective collaboration between governmental and nongovernmental organizations:** Although the number of non-governmental organizations working on issues of psychological counseling or stress management methods is limited, there is the possibility that the government can make active efforts to support such NGOs in their activities.

10.2 Service providers

Service providers can play major and crucial roles in gate keeping clients, which can affect how and when clients receive services or if they receive services at all.

- **New guidelines for health care delivery that are "migrant friendly":** The study showed that there are several barriers that face migrants when they seek health care. Those barriers should form guiding points to the introduction of new protocol and standards for health care delivery to migrant patients.
- **Early identification of people at risk and providing counseling for them.**
- **Training on the COPC approach:** Care providers can be trained on using this approach to assess health needs and to implement projects and programs in health care settings that can deal with different health problems.
- **Planning culturally sensitive health care service:** Despite the limitation of the study, there are specific findings that can be used in the planning and implementation of culturally sensitive health care services related to mental health of migrants in Germany.
- **Ethical standards and confidentiality must be respected when working in the field of mental health of migrants**: This helps decrease the feeling of discrimination that few migrants feel. Cultural and language issues in care are real and should be considered before treatment provision. In dealing with migrants, unexpected challenges such as racism, power relations and superstitious beliefs often arise and should not be underestimated.
- **Integration of immigrants into a developed network of psychiatric care systems:** It would be an asset if there is the possibility to hire qualified staff that can speak the same language of migrants and/or come from the same culture. This could be a useful strategy instead of creating special institutions for them and in turn will help to reduce their feeling of being discriminated.

- **Resources:** In order to carry out any intervention activity in health care delivery, there is the need to have time, equipment, and cooperative team which could affect the choice of the COPC approach as a method of application.

10.3 Institutions/Centers working on migrants' issues

In Germany, there are several bodies or institutions that work with different groups of migrants and form a kind of reference point for them. These institutions can do the following:

- **Communicate psychological needs of migrants to policy makers:** If these institutions have precise information on needs of migrants, they can provide it to governmental and international organizations for planning required services and projects.
- **Expose the issue of psychological stress among migrants:** This could be a challenging point as some people will think that it is an embarrassment to present the weaknesses in a community. However, policy makers will not pay attention unless the seriousness of the issue is presented or raised by a representing body, such as the centers, institutions or NGOs working with migrants.
- **Migrants' rights:** Many centers concentrate on training or offering language courses. Nevertheless, migrant communities should be informed on their rights within the social security systems of the host county as well as giving practical information on the location of clinics and governmental and nongovernmental services. This is highly needed because systems and daily life in migrants' countries are very different than system and life in the new receiving country. This will help to reduce the confusion that some migrants face, especially in the first period of their arrival to a new country.

10.4 Community/Women/Media and Publications

- **Reengineering communities to identify their own needs.** Given the application of the COPC approach in this research, the study recommends that there is more

success in programs design and their implementation when needs are identified by the community itself. In order to ensure that developed services respond to the real needs of migrant/minority groups, these groups should be included in planning and conceptualization phases, as it is not enough to include only the leaders of those groups. Therefore, communities need to get involved and participate instead of waiting for someone to speak for them.

- **Women should get more exposed to different activities:** Migrant women in Germany should pay more attention to themselves and their health. They need to go out and use the available facilities for physical exercise, which will reduce part of their stresses. Moreover, women need to improve their time plans between house work, caring for children, and giving time for themselves. This justifies that women form the prime advocates for change in their situation.
- **Media/Publications:** Given the shortage of printed materials that are published in Arabic language on health issues, the study recommends that there is a crucial need for publishing health education materials in the mother tongue language 'Arabic language' of migrants not only on disease-related topics but also on health rights and updates on new changes in the health care system. Because not all women belonging to migrant communities are literate, other forms of disseminating information such as TV programs, films, plays, posters should be explored. Moreover, the fact that women spend most of their free time watching TV urges the concentration on visual aids. Other countries that have migrants, such as the Netherlands or Sweden, they have special TV programs that are forecasted in different languages on certain times for migrants. Access to health and health information services must be provided to all groups in the society without discrimination.

10.5 Future research

- **Research based on COPC approach:** As this was the first study on migrants' problems in Europe using the COPC approach, and given the fact that the most effective intervention programs are based on community needs, it is crucial to use this approach in future studies in order to combine theory and practice and to strengthen both care providers and care seekers.
- **More epidemiological studies on migrants:** The findings of this study underline the need for more epidemiological studies on migrants in general, and on migrants from Arabic origin in specific, in order to determine the prevalence rates of several health disorders including the psychiatric ones. Moreover, more studies are needed on psychological stress in order to better understand its associated factors, coping strategies, and the effect of religious practices on reducing it.

  As this study was carried out in one city in Germany and on one gender which is females, there is the need to replicate such a study on males, in other cities and in other settings in order to generalize the results. Moreover, another follow-up test should be administered after a period of time among the same women who participated in the intervention in order to assess any long-term effect of the intervention program on psychological stress scores.
- **Training:** Training curricula of health professionals at universities should address specific needs of migrants, especially women, and should sensitize health professionals to cultural differences and to explicit and implicit racism.
- **SCL normative scores for Arab population:** Given the unavailability of normative scores for SCL questionnaire among Arabs, the study highlights this need so that studies for setting normative scores are planned and carried out on Arab patients, non-patients, adults and children. This will provide more appropriate reference points when future research is carried among Arabs using this instrument.
- **Dissemination of study results:** Researchers should make efforts to disseminate the findings of the study to parties that can help to translate recommendations into actions.

CHAPTER ELEVEN

SUMMARY

This study used the six-step COPC approach in order to address a prioritized problem that was chosen by the migrant community. These six steps are: community definition; community diagnosis; prioritization; detailed assessment; intervention and evaluation.

The aim of the study was to use the COPC as an approach to assess a migrant's community problem. The study had the following objectives: to assess the health situation and problems of Arab migrant women; to study one problem with its related severity/scores, sources, and associated factors; to plan an intervention program/methods to address this problem and to reduce it; to evaluate the effect of the intervention activities; and finally to issue recommendations for future service delivery for migrants.

The study had these questions: Is the COPC approach a practical method to investigate the problems of a migrant population in Germany? Based on the COPC approach, what is the problem of highest priority that Arab women face as migrants living in Germany? What intervention methods can reduce this problem?

The study gathered in-depth data concerning the health of Arab migrant women in general and their psychological health status in specific using both qualitative and quantitative methods. Five focus groups (41 participants), one open group discussion (43 attendants) and 11 key informant interviews yielded a preliminary list of health problems among Arab migrants. Then a questionnaire including the Symptom Check List-90-Revised (SCL-90-R) instrument was completed by 116 women and was re-administered to 46 women for the post intervention assessment.

The application of the COPC approach with its six steps was a challenging process and added rich data to the stress literature regarding the involvement of migrants in defining their health needs, and in defining possible risk factors associated with psychological stress. Each step of the COPC approach informed the next one, similar to a continuous spiral: After defining the community and the center for the COPC application, data were

collected on this community from different sources, followed by selecting one health problem with the highest priority. This problem was then studied in detail to get more related information surrounding it. An intervention program was developed and administered which was evaluated in the sixth step of the approach. The study stresses that there is a shift in the paradigm of care, from solving problems for people to supporting them to solve their problems by developing personal resources and social settings; especially in such a case where resources are limited due to language barriers.

Based on focus groups, key informant interviews, the questionnaire and the SCL-90-R score results, the study found that Arab migrant women have high psychological stress scores. Women had higher stress scores on seven items and the three indices of SCL compared to the normative sample scores ($P<0.001$). This study demonstrates a focal role of the specific migration context on psychological distress. Although there are limitations to this study, the consistency of the findings with theoretical predictions and research findings in other migrant samples suggests that our findings are valid. To date, this study provides the most comprehensive study of psychological distress among Arab migrants in Germany, and provides important information for future studies and interventions.

The findings regarding the relationship between psychological distresses and various demographic, health and psychological factors were revealing and informative. The study found that factors associated with higher stress scores on either one or more of the SCL items or indices were: older age, being married or divorced, having more children, coming from a North African country, previously having an illness, being ill the day of completing the questionnaire and feeling negatively being a migrant. On the other hand, the study found out that factors associated with lower stress scores were: higher level of education, living longer time in Germany, having a job and performing physical exercise. Moreover, results of this study indicate that certain independent variables can predict psychological stress which can help in developing a screening tool for health personnel to identify women at risk of high psychological stress and to refer them to social or psychological counseling. Results from the binary logistic regressions suggest that being

ill while completing the questionnaire, shorter duration of residence in Germany and feeling negatively about being a migrant were significant predicting variables for being a case on the SCL instrument ($P<0.01$). The logistic regression predictive percentage was 66.4; positive predictive value 79.3% and negative predictive value 53.4%.

The last part of the study suggested that an intervention consisting of physical exercise, relaxation techniques, as well as health education sessions can reduce psychological stress level. The results of the paired samples T-test showed that women had significant reduction on all the SCL dimensions and indices ($P<0.001$). These results support that there is the need to have more socio-psychological resources and effective problem-solving programs for migrant women. In addition to that, empowering women by providing education and cultural-sensitive services might reduce psychological distress levels.

In migrant research as in other kind of research, there is often the methodological error of focusing almost exclusively on problems, while ignoring the strength and resources of the target. Nevertheless, in this study having a center for women from different countries, highlights a major strong point in the way that women in specific and migrants in general are on the way of self-development and empowerment. In order to advance what is known about migrant women, more research should be directed to investigate the process through which women integrate, organize and balance their multiple roles.

Although the dynamics of migration are complex and dependent on broad political, social and economic issues, the key problem of both migration and population health differentials is inequity. Increasing inequity will result in increased pressure for migration, increased disparities in health status, and increased need to obtain health services. Many of the factors that result in a decision to migrate, or that force people out of their home countries, are the same factors that are associated with increased vulnerability to the development of mental health problems.

In conclusion, migration is a stressful experience and Arab migrant women have high psychological stress. Improving the psychological status of migrants is not the responsibility of psychologists, psychiatrists, or counselors alone, but it is a combined responsibility of the whole community including migrants, policy makers, care providers and media. The question in the meantime remains if there is a need for a total change in the policy of the host country concerning migrants and how helpful interventions are when sources of stress exist. May be more should be done on political organization around migrant rights in the future, and more dialogue between Germans and migrants is needed. This is because migration from a public health point of view will continue to have serious ramifications for the migrants, the family they leave behind and the communities that host them. And another concern might be: Is Germany ready for the COPC application? We do not know the answer to this yet. However, taking an initial step as this study did is an achievement in itself. This study suggests that joint efforts that include the community as a partner can play an important role in achieving better health.

We end with a quote from John Wolfensohn, the previous president of the World Bank (2004):

"But for every part of the world: instability, migration, crime; health becomes our issue and it is just too late to wait for the crisis".

And the remaining question for the health care system and health professionals as presented in this figure is: Is it the health of the individual or the health of the public that is worth more concentration?


PUBLIC HEALTH
INDIVIDUAL HEALTH

REFERENCES AND BIBLIOGRAPHY

[1] Wolffers I, Verghis S, Marin M. Migration, human rights and health. Lancet. 2003; 362:2019-20.

[2] Shuval J. Migration and stress. In: *Handbook of stress*: *Theoretical and clinical aspects.* (2nd Ed.). Eds. L Goldberger and S. Breznits, pp 677-691. The Free Press, New York; 1993.

[3] Kaplan M and Marks G. Adverse effects of acculturation: Psychological distress among Mexican-American young adults. *Social Science and Medicine*. 1990; 31:1313-1319.

[4] Littlewook R and Lisedge M. Acute Psychotic reactions in Caribbean-born patients. *Psychol Med*. 1981; 11:303-18.

[5] Selten J, Sijben N. First admission rates for Schizophrenia in immigrants in the Netherlands. *Soc Psychiatry Psychiatr Epidemiol*. 1994; 29:71-7.

[6] Charalabaki E, Bauwens F, Stefos G, Madianos M, Medlewitz J. Immigration and psychopathology: a clinical study. *Eur Psychiatry*. 1995; 10:237-44.

[7] Häfner H. Pscyciatrisiche Morbidität von Gastarbeitern in Mannheim. *Nervenarzt*. 1980; 51:672-83.

[8] Gillam S, Miller R. *COPC-A Public Health Experiment in Primary Care*. London: King's Fund; 1997.

[9] Iliffe S, Lenihan, P. Integrating Primary Care and Public Health: Learning from the Community-Oriented Primary Care Model. *International Journal of Health Services*. 2003; 33:85-98.

[10] Gillam S, Miller, R. *COPC-A Public Health Experiment in Primary Care*. London: King's Fund; 1997.

[11] Nutting P, Wood M, Corner, E. Community-oriented primary care in the United States: A status report. *JAMA*. 253:March 22/29; 1985.

[12] Haber D. Community-oriented primary care: Applying the model to a senior center. *Fam and Community Health*. 1996; 18:33-39.

[13] Ibid.

[14] Brown T, Fee E. "Palliatives Will No Longer Do": The Deep Roots and Continuing Dynamic of Community-Oriented Primary Care. *Am J Public Health*. 2002; 92:1711-1712.

[15] Tollman S. Community-oriented primary care: origins, evolution, applications. *Soc Sci Med*. 1991; 32:633-642.

[16] Brown T, Fee E. "Palliatives Will No Longer Do": The Deep Roots and Continuing Dynamic of Community-Oriented Primary Care. *Am J Public Health.* 2002; 92:1711-1712.

[17] Susser M. Pioneering community oriented primary care. *Bull World Health Organ*. 1999; 77:436-438.

[18] Nutting P. (ed.). *Community Oriented Primary Care: From Principle to Practice*. Washington DC: US Department of Health and Human Services. HRSA publication; 1987.

[19] Abramson J, Kark, S. *Community Oriented Primary Care: meaning and scope*. *In: Community Oriented Primary Care*. Connor E. and Mullan F. (ed.). Proceedings of a Conference held under the Auspices of the Institute of Medicine. Washington: National Academy Press; 1982.

[20] Mullan F, Focht C *et al. Community Oriented Primary Care: An Implementation Guide.* Washington DC: George Washington University and Hebrew University of Jerusalem; 2002.

[21] Declaration of Alma-Ata. In: *International Conference on Primary Care*, Alma-Ata, USSR, 6-12 September; 1978.Geneva, World Health Organization; 1978.

[22] Epstein L, Gofin H, Gofin R, Neumark Y. The Jerusalem Experience: Three Decades of Service, Research, and Training in Community-Oriented Primary Care. *Am J Public Health*. 2002; 92:1717-1720.

[23] Nutting P. (ed.). *Community Oriented Primary Care: From Principle to Practice*. Washington DC: US Department of Health and Human Services. HRSA publication; 1987.

[24] Haber G. Community oriented primary care: Applying the model to a senior center. *Fam. and Community Health*. 18:33-39; 1996.

[25] Nutting P. (ed.). *Community Oriented Primary Care: From Principle to Practice*. Washington DC: US Department of Health and Human Services. HRSA publication; 1987.

[26]Ibid.

[27] Epstein L, Gofin H, Gofin R, Neumark Y. The Jerusalem Experience: Three Decades of Service, Research, and Training in Community-Oriented Primary Care. *Am J Public Health*. 2002;92:1717-1720.

[28] Gillam S, Plamping D, McClenahan J, and Harries J. *Community Oriented Primary Care*. London: King's Fund; 1994.

[29] Mullen P, Spurgeon P. *Priority Setting and the Public*. Health Services Management Center. University of Birmingham. Radcliffe Medical Press; 2000.

[30] Picket G and Hanlon J. *Public Health: Administration and practice*. The C.V Mosby Company, Saint Louis; 1990.

[31] WHO. *Manual of Epidemiology for District Health Management*. Vaughan J, Morrow R (ed.). Geneva, Switzerland; 1989

[32] National Health Services Management Executive. Local voices. The views of local people in purchasing for health. Department of Health, London; 1992.

[33] Coast J, Donovan J. *Public Participation in Priority Setting: Commitment or Illusion?* In: Priority Setting: The Health Care Debate. Coast J, Donovan J. Frankel S (ed.). John Wiley and sons, West Sussex, England; 1996: 203-233.

[34] Haber G. Community oriented primary care: Applying the model to a senior center. *Fam and Community Health*.1996;18:33-39.

[35] Ibid.

[36] Rhyne et al.eds. *Community Oriented Primary Care: Health Care for the 21st Century*. Washington DC, American Public Health Association; 1998.

[37] Longlett S, Kruse J, Wesley RM. Community oriented primary care: critical assessment and implications for resident education. *J Am Board Fam Pract*. 2001;14:141-147.

[38] UNICEF. *The Bamako Initiative: reaching goals through strengthening service delivery*. New York;1990.

[39] OECD. *Promoting participatory development: from advocacy to action*. Paris;1994.

[40] World Bank. *The World Bank and participation*. Washington, DC.; 1994.

[41] Abramson J, Kark, S. Community *Oriented Primary Care-New Directions for Health Services*. Connor E, Mullan F. (eds.). Washington, DC.: National Academy Press;1983.

[42] Geiger H. Community oriented primary care: a path to community development. *Am J Public Health.* 2002;92:1713-1716.

[43] WHO. *Community involvement in health development: a review of the concept and practice*. Geneva; 1999.

[44] Smithies J, Webster G. *Community Involvement in Health From passive recipients to active participants*. London: Ashgate Publishing Limited; 1998.

[45] Skinner S. *Building Community Strengths: A Resource Book on Capacity Building.* London: Community Development Foundation; 1997.

[46] Smithies J, Webster G. *Community Involvement in Health From passive recipients to active participants*. London: Ashgate Publishing Limited; 1998.

[47] Mullan F, Epstein L. Community oriented primary care: new relevance in a Changing World. *Am J of Public Health*. 2002;92:1748-1755.

[48] Nutting P. (ed.). *Community Oriented Primary Care: From Principle to Practice*. Washington DC: US Department of Health and Human Services. HRSA publication; 1987.

[49] Plamping D. Promoting community oriented primary health care. *Nursing Times.* 1994; 90:44.

[50] Mullan F, Epstein L. Community oriented primary care: new relevance in a Changing World. *Am J of Public Health*. 2002;92:1748-1755.

[51] Gillam S, Miller, R. *COPC-A Public Health Experiment in Primary Care*. London: King's Fund; 1997.

[52] Nutting, P, Connor E. Community-oriented primary care in the United States: A status report. *JAMA*. 1985;253:1763-1766.

[53] Zweifler J, Gonzalez A. Teaching residents to care for culturally diverse populations. *Academic Medicine*. 1998;73:1056-1061.

[54] Plamping, D. Promoting community oriented primary health care. *Nurs. Times*. 1994;90:44.

[55] University College London: www.ucl.ac.uk/MSc (Accessed in 2004).

[56] Nutting P. (ed.). *Community Oriented Primary Care: From Principle to Practice*. Washington DC: US Department of Health and Human Services. HRSA publication; 1987.

[57] Tollman, S. Community oriented primary care: origins, evolution, applications. *Soci. Sci. Med*. 1991;32:633-642.

[58] Online English Dictionary (http://dict.die.net/immigration/).

[59] Decosas J, Adrien A. *Migration and HIV/AIDS*. 1997; AA:577-584.

[60] UNAIDS. *Migrants' Right to Health.* UNAIDS and International Organization for Migration., Geneva, Switzerland; 2001.

[61] Triebel, A. *Migration in mrodernen Gesellschaften. Soziale Folgen von Einwanderund und Gasarbeit*. Grundlagentexte Soziologie. Juventa Verlag, Weinheim und München; 1990.

[62] Carballo, M. *Scientific consultations on social and health impact of migration: priorities for research.* Final report, International Organization of Migration;1994.

[63] Krämer A and Baune B. Migrationen: eine Herausforderung für die Gesundheitswissenschaften und die gesundheitliche Versorgung. In: *Gesundheit von Migranten: Internationale Bestandsaufnahme und Perspektiven*. Krämer A, Prüfer-Krämer L (ed.). Juventa Verlag Weinheim und München; 2004.

[64] Federal Foreign Office-Facts about Germany: Acquiring German Nationality: www.tatsachen-ueber-deutschland.de (Accessed on 30.05.2005).

[65] Castles and Miller M.J. *The age of migration. International movements in the modern world.* The Macmillan Press. Houndmills; 1993.

[66] UNAIDS. *Migrants' Right to Health.* UNAIDS and International Organization for Migration., Geneva, Switzerland;2001.

[67] Triebel, A. *Migration in modernen Gesellschaften. Soziale Folgen von Einwanderund und Gasarbeit.* Grundlagentexte Soziologie. Juventa Verlag, Weinheim und München; 1990.

[68] ILO. *Migrant Workers*; 1999; p.4.

[69] Meier-Braun K. No Future Without Migration: Demography, Migration, Urbanization. Presentation with the framework of the European Union's Youth Program, Action 1, international youth exchange on "Planning our cities, planning our future-Megacities", Cairo, Sept.25-October 5, 2003.

[70] International Organization of Migration (IMO). *Migration and Health. Innovation in Social Sciences Research.* 1993; 6,1: 5-7.

[71] International Organization for Migration (IMO). *Health Impact of Mass Migration*. Moscow, 27-28 April; 1993.

[72] Baune B. *Psychologische und Psychiatrische Probleme bei Migranten*. A lecture presented in the International Committee of the Red Cross Bielefeld on 4.06.2005.

[73] World Bank. *Workers in an Integrating World: World Development Report 1995*. Oxford, Oxford University Press; 1995.

[74] Migration and Health. Human Health, Demography and Population Mobility. IOM, International Organization for Migration. 2001 Newsletter, 1:1-5.

[75] Meier-Braun K. No Future Without Migration: Demography, Migration, Urbanization. Presentation with the framework of the European Union's Youth Program, Action 1, international youth exchange on "Planning our cities, planning our future-Megacities", Cairo, Sept.25-October 5, 2003.

[76] UNAIDS. *Migrants' Right to Health.* UNAIDS and International Organization for Migration., Geneva, Switzerland; 2001.

[77] Salt J. *Current and Future Trends in International Migration in Europe*. Strasbourg, Council of Europe; 1997.

[78] Berlin-Institut für Bevölkerung und Entwicklung (www.berlininstitut.org). (Accessed on 3.06.2005).

[79] United Nations. *International Migration Report*; 2002.

[80] Tadmori G. The Arab World. Genetic Disorders in the Arab World: United Arab Emirates. 2004; 1: 1-5.

[81] London Civic Forum. *Voices for London: Policy Commission. The Arab Community in London*; March 2002.

[82] Zogby International (www.zogby.com); 2000.

[83] UNAIDS. *Migrants' Right to Health.* UNAIDS and International Organization for Migration., Geneva, Switzerland;2001.

[84] Meier-Braun K. No Future Without Migration: Demography, Migration, Urbanization. Presentation with the framework of the European Union's Youth Program, Action 1, international youth exchange on "Planning our cities, planning our future-Megacities", Cairo, Sept.25-October 5, 2003.

[85] World Statistics: www.nationmaster.com/country/gm/Immigration (Accessed on 50.05.2005).

[86] Schmidt C, Zimmermann K. Migration Pressure in Germany: Past and Future. In: Zimmermann, K (Ed): *Migration and Economic Development*. Berlin: Springer. 1992; 207-236.

[87] Schmidt, M. German Economic Growth After the Demise of Socialism: The Potential Contribution of East-West Migration. *Jahrbuch für Wirtschaftgeschichte*; 1996/2:109-126.

[88] Triandafyllidou A. *Immigrants and National Identity in Europe*. Routledge, Taylor and Francis Group. London;2001.

[89] Hof, B. *Europa im Zeichen der Migration, Szenarien zur Bevölkerungs-und Arbeitsmarktentwicklung in der Europäschen Gemeinschaft bis 2020*. Deutscher Institut-Verlag, Köln;1993.

[90] Özcan V, Klever P. Country Profile: Germany. *Focus Migration*. 2005; 1-6.

[91] Federal Office of Administration and Federal Ministry of Interior, Germany.

[92] *Stern magazine*: Hamburg. 1999;3.

[93] IOM and National Statistical Services; 2003-2004.

[94] Volger M, Rotte R. The Effects of Development on Migration: Theoretical Issues and New Empirical Evidence. *Journal of Population Economics*. 2001; 485-508.

[95] Fertig M, Schmidt C. First and Second-Generation Migrants in Germany- What Do We Know and What Do People Think. Institute for the Study of Labor (IZA), Discussion paper No. 286. Bonn; 2001.

[96] Ibid.

[97] Ibid.

[98] Corvalan C, Driscoll T, Harrison J. Role of migrant factors in work-related fatalities in Australia. *Scand. J. Work Environ. Health.* 1994; 20:364-370.

[99] Korporal J, Geiger A. *Zur Gesundheitlichen Lage der ausländischen Bevölkerung in der Bundesrepublik Deutschland: Erste Erkenntnisse.* In: I. Weber, M Abel, L. Altenhofen, et al. Dringliche Gesundheitsprobleme der Bevölkerung der Bundesrepublik Deutschland. Baden-Baden: Nomos, S. 1990;577-601.

[100] Statistisches Bundesamt. *Statischtisches Jahrbuch*; 1998.

[101] German Mikrozensus; 1995.

[102] Collatz J. Welt im Umbruch. Auf dem Wege in das Jahrhundert der Migration. In: Koch E, Özek M, Pfeiffer W (editors). *Psychologie und Pathologie der Migration* . Deutsch-Türkische Perspektiven. Freiburg: Lambertus; 1995.

[103] Pelikan J, Krajic K, Schulze B, Trummer U. *Migrant-friendly hospitals: A European initiative to promote health and health literacy of migrants and ethnic minorities.* LBI for the Sociology of Health and Medicine, Institute for Sociology, University of Vienna, Vienna, Austria; 2002.

[104] Committee on Migration, Refugees and Demography. *Report on Health conditions of migrants and refugees in Europe.* Lord Ponsonby, UK, Socialist Group; 2000.

[105] WHO and European Commission. *Highlights on Health in Germany*. May 1999.

[106] German Central Committee to Fight TB; 2002.

[107] Carballo M and Nerukar A. Migration, Refugees and Health Risks. *Supplement*. June 2001, 7: 556-560.

[108] Ibid.

[109] Krämer A, Krämer P, Mikolajczyk RT, and Kretzschmar M. Impact of Immigration on the HbsAg Prevalence in Germany. In EUPHA workshop: Burden of infectious diseases on migrant health in Europe: (www.eupha.org/html/2005_graz/1-8.doc).

[110] Carballo M and Nerukar A. Migration, Refugees and Health Risks. *Supplement*. June 2001; 7: 556-560.

[111] Weilandt A. Husimann A, Joksimovic L et al. *Gesundheit von Zuwanderern in Nordrhein-Westfalen*. Ministerium für Frauen , Jugend Familie und Gesundheit des Landes Nordrhein Westfalen. Gesundheitsberichte NRW. Düsseldorf; 2000.

[112] Ibid.

[113] Carballo M and Nerukar A. Migration, Refugees and Health Risks. *Supplement*. June 2001; 7: 556-560.

[114] WHO and European Commission. *Highlights on Health in Germany*. May 1999.

[115] de Jong J. Ambulatory mental health care for migrants in the Netherlands. *Curare.* 1994; 17,1: 5-34.

[116] Huismann A et al. *Migration and Health in Germany*. In: A. Huismann, C. Weilandt& A. Greiger, (eds.), *Country Reports on Migration and Health in Europe*. Bonn: Wissenschafliches Institut der ärzte Deutschlands e.V.; 1997.

[117] Gaspar O, Siles D. *Migration and Health in Spain.* In: Huismann C. Weilandt & A. Greiger, (eds.), *Country Reports on Migration and Health in Europe.* Bonn: Wissenschafliches Institut der ärzte Deutschlands e.V. (WIAD);1997.

[118] Weilandt A. Husimann A, Joksimovic L et al. *Gesundheit von Zuwanderern in Nordrhein-Westfalen.* Ministerium für Frauen , Jugend Familie und Gesundheit des Landes Nordrhein Westfalen. Gesundheitsberichte NRW. Düsseldorf; 2000.

[119] Uniken Venema H, Wierdsma A. *Opnaemes van migranten in psychitrische ziekenjuizen.* Tijdschrift voor sciale Gezondheidszorg. 1995;17,27.

[120] Carballo M and Nerukar A. Migration, Refugees and Health Risks. Supplement. June 2001; 7: 556-560.

[121] Committee on Migration, Refugees and Demography. *Report on Health conditions of migrants and refugees in Europe*. Lord Ponsonby, UK, Socialist Group; 2000.

[122] Oztek Z. Social and health problems of migrant workers. In: M College, H van Geuns, P Svensson (eds). *Migration and Health: Towards An Understanding of the Health Care Needs of Ethnic Minorities.* Copenhagen WHO: Regional Office for Europe; 1986.

[123] Giannopoulou I. Patterns of alcohol and drug use and indicators of psychological distress among immigrant Greek adolescents. In: *ICAA CIPAT*, Oslo. 1988; 2:130-139.

[124] Akbiyik O. Un centre d'accueil pour toxicomanes migrants. *Bull. Liaison CNDT*. 1990; 16:178-188.

[125] WHO. *Health for all database*. Copenhagen: WHO Regional Office for Europe; 1996.

[126] Haour-Knipe M, Rector R. *Crossing borders: migration, ethnicity and AIDS*. London, Taylor and Francis; 1996.

[127] Tan M. "Migration and Risk", *AIDS action*. 1998; 40, July-September, p2.

[128] Bollini P, Siem H. "No Real Progress towards Equity: Health of Migrants and Ethnic Minorities on the eve of the Year 2000", *Soc. Sci. Med*. 1995; 41,6:819-828;

[129] UNAIDS. *Migrants' Right to Health.* UNAIDS and International Organization for Migration., Geneva, Switzerland; 2001.

[130] Ibid.

[131] UNAIDS. *Migrants' Right to Health*. UNAIDS and International Organization for Migration., Geneva, Switzerland;2001.

[132] GRC-Position on "Migrant Health". March, 2002.

[133] Brucks U. *Gesundheit-Krankheit medizinische Kulturspezifischer Aspekte*. Masch (Fernuniverisität Hagen); 1984.

[134] Zeiler, J. *Zur nervenärztlichen und stationär-psychiatrischen Behandlung von Migranten, sozialpsychiatirische Informationen*. S.27-33, 1993.

[135] Decosas J, Adrien A. *Migration and HIV. AIDS.* 1997.

[136] GRC-Position on "Migrant Health". March, 2002.

[137] Committee on Migration, Refugees and Demography. *Report on Health conditions of migrants and refugees in Europe*. Lord Ponsonby, UK, Socialist Group; 2000.

[138] Ibid.

[139] GRC-Position on "Migrant Health". March, 2002.

[140] Charta of the International Conference on health promotion of WHO, Ottawa;1986.

[141] General Assembly of Red Cross (GRC) *Position on "Migrant Health"*. March, 2002.

[142] Bartlett D. *Stress Perspectives and processes*. Open University Press: Buckingham; 1998.

[143] Ibid.

[144] Cummings N. and Vandenbos G. The twenty year Kaiser-Permanente experience with psychotherapy and medical utilization: Implications for national health policy and national health insurance. *Health Policy Quarterly*. 1981;1:159-175.

[145] Sobel D. Rethinking medicine: Improving health outcomes with cost-effective psychosocial interventions. *Psychosomatic Medicine*. 1995; 52:234-244.

[146] Seyle H. *Stress without Distress*. New York: J. B. Lippincott; 1974.

[147] Lazarus R. and Folkman S. *Stress, Appraisal and Coping*. New York: Springer; 1984.

[148] Werner J. Stressors and health outcomes: Synthesis of nursing research, 1980-1990. In J. Barnfather and B. Lyon (ed.). *Stress and coping: State of the science and implications for nursing theory, research, and practice* (p. 11-41). Indianapolis, Sigma Theta Tau Center Nursing Press; 1993.

[149] Symonds C. Use and abuse of the term flying stress. In: *Air Ministry, Psychological Disorders in Flying Personnel of the Royal Air Force 1939-1945*. London: HMSO; 1947.

[150] Holmes T. and Rahe R. The social readjustment rating scale. *Journal of Psychosomatic Research*. 1967; 12:213-233.

[151] Bartlett D. *Stress Perspectives and processes.* Open University Press: Buckingham; 1998.

[152] Ibid.

[153] Lazarus R. and Folkman S. *Psychological stress and the coping process*. New York: Springer; 1984.

[154] Seyle H. *Stress without Distress*. New York: J. B. Lippincott; 1974.

[155] Helman C. *Culture, Health and Illness.* Fourth edition. Butterworth Heinemann. Oxford; 2000.

[156] Frankenhaeuser M. The sympathetic-adrenal and pituitary-adrenal response to challenge: Comparison between the sexes. In: *Biobehavioral bases of coronary heart disease* T. Dembroski, T. Schmidt and G. Blumchen (ed.). Karger. New York; 1983.

[157] Karasek R. and Theorell T. Healthy work. *Stress, productivity, and the reconstruction of working life.* Basic Books. New York; 1990.

[158] Siegrist J. Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*. 1996; 1:27-41.

[159] World Health Organization. *WHO European Ministerial Conference on Mental Health.* Helsinki, 12-15 January; 2005.

[160] Takeda E, Terao J, Nakaya Y et al. Stress control and human nutrition. J Med Invest. 51:139-45; 2004.

[161] Lyon B. In: V. Rice (ed). *Handbook of Stress, Coping and Health: Implications for Nursing Research, Theory, and Practice*. (page 3-23). Sage publications, London; 2000.

[162] Goleman D. and Gurin J. *Mind-body medicine: How to use your mind for better health*. Consumer Reports Books, New York; 1993.

[163] Pelletier K. Between mind and body: Stress, emotions, and health. In: Mind-body medicine: How to use your mind for better health.(p. 18-38). D. Goleman and J. Gurin (Eds.), Consumer Reports Books, New York; 1993.

[164] Davis P., Holm J, Myers T., and Suda K. Stress, headache and physiological disregulation: A time-series analysis of stress in the laboratory. *Headache*. 1998; 38(2):116-121.

[165] Holm J, Lokken C. and Myers T. Migraine and stress: A daily examination of temporal relationships in women migraineurs. *Headache*.1997; 37(9): 553-558.

[166] Dyrehag L., Widerstrom-Noga E., Carlsson S., Kaberger K., Hender N., Mannheimer C., and Andersson S. Relations between self-raged musculoskeletal symptoms and signs and psychological distress in chronic neck and shoulder pain. *Scandinavian Journal of Rehabilitation Medicine*. 1998; 30(4):235-242.

[167] Whitehead W. and Schuster M. *Gastrointestinal disorders: Behavioral and physiological basis for treatment.* San Diego: Harcourt Brace Jovanovich; 1985.

[168] Ringsberg K. and Akerlind I. Presence of hyperventilation in patients with asthma-like symptoms but negative asthma test responses: provocation with voluntary hyperventilation and mental stress. *Journal of Allergy and Clinical Immunology*. 1999;103(4): 601-608.

[169] Vgontzas A et al. Chronic insomnia and activity of stress system: A preliminary study. *Journal of Psychosomatic Research*. 1998; 45:21-31.

[170] Glaser R. and Kiecolt-Glaser J. Stress-associated immune modulation: Relevance to viral infections and chronic fatigue syndrome. *American Journal of Medicine*. 1998; 105(3A):35-42.

[171] Dunkel-Schetter C., Feinstein L., Taylor, S, and Falke R. Patterns of coping with Cancer. *Health Psychology*. 1992; 11: 79-87.

[172] Folkman S., Lazarus R., Gruen R. And DeLongis A. Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*. 1986; 50:571-579.

[173] Fernando S. *Mental Health, Race and Culture*. McMillan and Mind Publications. London; 1991.

[174] Thomas S. and Wimbush F. The journey embedded in psychophysiological disorders. In V. Carson (ed). *Mental health nursing*. Philadelphia: Saunders; 1999.

[175] Weinman J. *An Outline of Psychology as Applied to Medicine*. Wright; 1981, pp.60-84.

[176] World Health Organization. Society, stress, and disease. *WHO Chron*. 1971; 25:168-78.

[177] Selye H. A syndrome produced by diverse nocuous agents. *Nature*. 1936; 138:32.

[178] Appley M. and Trumbull R. (Ed.). *Dynamics of Stress: Physiological, Psychological and Social Perspectives.* New York, Plenum Press; 1986.

[179] Helman C. Culute, *Health and Illness*. Fourth edition. Butterworth Heinemann. Oxford; 2000.

[180] Weinman J. *An Outline of Psychology as Applied to Medicine*. Wright; 1981, pp.60-84.

[181] Guthrie G, Vestraete A, Deines M and Stern R. Symptoms of stress in four societies. *J. Soc. Psychol*. 1975; 95:165-72.

[182] Kritiz S and Moos R. Physiological effects of social environments. *Psychosom. Med.* 1974; 36:96-113.

[183] Brown G. and Andrews B. Social Support and Depression. In: M. Appley and R. Trumbull (Ed.). *Dynamics of Stress: Physiological, Psychological and Social Perspectives*. New York, Plenum Press; 1986.

[184] Steptoe A. *Psychological processes in the etiology of disease: critique and formulation. Handbook of Behavior Therapy and Psychological Science*. Pergamon. New York; 1991.

[185] International Organization for Migration. *Health Impact of Mass Migration*. Moscow. Conference between 27-28 April, 1993.

[186] Kessler R. &McLeod J. Social Support and mental health in community samples. In *Social Support and Mental Health* (eds S. Cohen &S. Syme), pp. 219-240. Academic Press: London; 1985.

[187] Wortman C. & Conway T. The role of social support in adaptation and recovery from physical illness. In *Social Support and Health* (eds S. Cohen & S. Syme), pp. 281-302. Academic Press: London; 1985.

[188] MacLachlan M. *Culture and Health*. John Wiley & Sons. West Sussex; 1997.

[189] Ornstein R and Sobel D. *The Healing Brain.* New York: Simon & Shuster; 1987.

[190] Uchino B.N., Cacioppo J.T & Kiecolt-Glaser J.K. The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*. 1996; 119: 488-531.

[191] Selye H. A syndrome produced by diverse nocuous agents. *Nature.* 1936; 138:32.

[192] Taylor C. In: *Classic Anthropology: Critical Essays* 1944-1996. Bennet J. (ed.). 1996, p. 302.

[193] Allen T. Taking culture seriously. In T. Allen and A. Thomas (Eds.) *Poverty and Development in the 1990s*. Oxford: Oxford University Press; 1992.

[194] Fernando S. *Mental Health, Race and Culture*. McMillan and Mind Publications. London; 1991.

[195] Dollard J. *Criteria for the Life History: With Analysis of Six Notable Documents*. New Haven: Yale University Press; 1935.

[196] Murdock G. *Theories of Illness: A World Survey.* Pittsburgh: University of Pittsburgh Press; 1980.

[197] Hofstede G. *Cultures and Organizations*. London: Harper Collins Publishers; 1991.

[198] Draguns J. Applications of cross-cultural psychology in the field of mental health. In R.W. Brislin (Ed.) *Applied Cross-Cultural Psychology*. Newburrz Park. Sage; 1990.

[199] MacLachlan M. *Culture and Health*. John Wiley & Sons. West Sussex; 1997.

[200] Fernando S. (ed.). *Mental Health in a Multi-ethnic Society: A Multi-disciplinary Handbook.* Routledge, London; 1995.

[201] Hancock T and Perkins F. The Mandala of Health: a conceptual model and teaching tool. *Health Promotion*. 1985; 24:8-10.

[202] Eisler R. and Hersen M. (ed.). *Handbook of Gender Culture and Health*. Lawrence Erlbaum Associates. New Jersy; 2000.

[203] Ibid.

[204] Hughes C. Psycho-cultural dimensions of social change. In J. P. Finney (ed.). *Culture, change, mental health and poverty*. Lexington: University of Kentucky Press; 1969.

[205] Kiev A. *Transcultural psychiatry*. New York: Free Press; 1972.

[206] Kohen D. (ed). *Women and Mental Health*. Routledge. London; 2000.

[207] Parkes C. Psycho-social transitions: a field for study. *Soc. Sci. Med*. 1971;5:101-15.

[208] Kohen D. (ed). *Women and Mental Health*. Routledge. London; 2000.

[209] Weiss R. *The provisions of social relations*. In Doing Unto Others (ed. Rubbin Z), pp 17-26. Englewood Cliffs, NJ: Prentice-Hall; 1974.

[210] Selye H. A syndrome produced by diverse nocuous agents. *Nature*. 1936; 138:32.

[211] International Organization for Migration (IMO). *Health Impact of Mass Migration*. Moscow, 27-28 April; 1993.

[212] Christopher K. Determinant of Psychological Well-Being in Irish Immigrants. *Western Journal of Nursing Research*. 2000; 22:123-143.

[213] Beiser M. Migration in a developing country: Risk and opportunity. In: *Uprooting and surviving: Adaptation and resettlement of families and children.* R Nann (Ed.), Meced, CA: D. Reidel; 1982.

[214] Parkes C. Psycho-social transitions: A field for study. *Social Science and Medicine*. 1971; 5(1):101-115.

[215] Miller T. Advances in understanding the impact of stressful life events on health. *Hosp.and Commun. Psychiatry.* 1988; 39:615-622.

[216] Aroian K. A model of psychological adaptation to migration and resettlement. *Nursing Research*. 1990; 39(1):5-10.

[217] Flaskerud J and Akutsu P. Significant influence of participation in ethnic-specific programs on clinical diagnosis in ethnic-specific programs on clinical diagnosis for Asian Americans. *Psychological Reports*. 1993; 72:127-141.

[218] Ailinger R. Folk beliefs about high blood pressure in Hispanic immigrants. *Western Journal of Nursing Research.* 1988; 10:629-636.

[219] Kulig J. Conecption and birth control use: Cambodian refugee women's beliefs and practices. *Journal of Community Health Nursing*. 1988; 5(4):235-246.

[220] Frye B and D'Avanzo C. Cultural themes in family stress and violence among Cambodian refugee women in the inner city. *Advances in Nursing Science*. 1994; 16(3): 64-77.

[221] Collatz J, Machleidt W, Salman R. (ed.). *Aussiedler aus Osteuropa. Berlin: Verlag für Wissenschaft und Bildung*; 1997.

[222] Westermeyer J. *Mental Health for Refugees and other Migrants: Social and Preventive Approaches.* Springfield, Illinois: Charles Thomas; 1989.

[223] Opler M (ed.) *Culture and Mental Health: Cross-Cultural Studies*. The Macmillan Company, New York; 1959.

[224] Miller W. Psychological and psychiatric aspects of population problems. In: Arieti et al. (eds). *American handbook of Psychiatry,* 2nd Ed. Basic Books, New York; 1975.

[225] Gordon E. Mentally ill West Indian immigrants. *British Journal of Psychiatry* III. 1965: 51-56.

[226] de Jong J. Ambulatory mental health care for migrants in the Netherlands. *Curare,* 17(1), 1994; 5.34.

[227] Huismann A et al. Migration and Health in Germany. In: *Country Reports on Migration and Health in Europe*. A. Huismann, C. Weilandt& A. Greiger, (eds), Bonn: Wissenschafliches Institut der ärzte Deutschlands e.V. (WIAD);1997.

[228] Gaspar O, Siles D. Migration and Health in Spain. In: *Country Reports on Migration and Health in Europe.* Huismann C. Weilandt& A. Greiger, (eds),. Bonn: Wissenschafliches Institut der ärzte Deutschlands e.V. (WIAD); 1997.

[229] Uniken Venema H, Wierdsma A. Opnaemes van migrantedn in psychitrische ziekenjuizen. *Tijdschrift voor sciale Gezondheidszorg*. 1995;17:27.

[230] IOM. Position Paper on Psychosocial and Mental Well-Being of Migrants; 2003.

[231] Machleidt W. Transkulturelle Aspekte psychiatrischer Erkrankungen. In: *Psychiatrie und Psychotherapie*. Möller J, Laux G, Kapfhammer H (ed.). Berlin Heiderlberg New York: Springer Verlag; 2000.

[232] Baune B. Psychische Gesundheit uner transkulturellen Gesichtspunkten. In: *Gesundheit von Migranten: Internationale Bestandsaufnahme und Perspektiven*. Krämer A, Prüfer-Krämer L (ed.). Juventa Verlag Weinheim und München; 2004.

[233] Committee on Migration, Refugees and Demography. *Report on Health conditions of migrants and refugees in Europe.* Lord Ponsonby, UK, Socialist Group; 2000.

[234] Lazaridis K. *Psychiatrische Erkrankungen bei Ausländern*. In: *Arbeiterwohlfahrt Bundesverband E.V., Migration und psychische Gesundheit. Zur psychosozialen Lage von Migranten in der Bundesrupublik Deutschland*. Bonn; 1985.

[235] Huismann A et al. Migration and Health in Germany. In: *Country Reports on Migration and Health in Europe* .A. Huismann, C. Weilandt & A. Greiger, (eds), Bonn: Wissenschafliches Institut der ärzte Deutschlands e.V. (WIAD); 1997.

[236] Sundquist J. Migration, equality and access to health care services. *J Epidemiol Community Health*. 2001; 55:691-692.

[237] Forrest D. Control of Imported Communicable Diseases: Preparation and Response". *Canadian Journal of Public Health.* 1996; 87(6):369.

[238] International Organization of Migration. Migration and Health. *Innovation in Social Sciences Research.* 1993; 6(1): 5-7.

[239] Murray J. Managing stress and living longer. In: *The Annual Editions Series*. Dushkin Publishing Group, Guildford; 1992.

[240] Bhugra D and Jones P. Migration and Mental Health. *Advances in Psychiatric Treatment*. 2001; 7: 216-223.

[241] International Migration, Special Issue: *Migration and Health in the 1990s*; 1990.

[242] International Organization of Migration. *Migration and Health. Innovation in Social Sciences Research.* 1993; 6(1): 5-7.

[243] Westermeyer J. *Mental Health for Refugees and other Migrants: Social and Preventive Approaches.* Springfield, Illinois: Charles Thomas; 1989.

[244] Nathanson C. Social roles and health status among women: the significance of paid employment. *Soc. Scie and Med*. 1980; 14a:463-71.

[245] Masi R, Mensah L and Keith McLeod. *Health and Cultures: Exploring the Relationships.* Mosaic Press. Ontario; 1996.

[246] Opler M.(ed.) *Culture and Mental Health: Cross-Cultural Studies*. The Macmillan Company, New York; 1959.

[247] Bhugra D and Bhui K. Cross-cultural psychiatric assessment. *Advances in Psychiatric Treatment*. 1997; 3: 103-110.

[248] MacLachlan M. *Culture and Health*. John Wiley & Sons. West Sussex; 1997.

[249] Eisler R. and Hersen M. (ed.). *Handbook of Gender Culture and Health*. Lawrence Erlbaum Associates. New Jersy; 2000.

[250] Berry J.W and Kim. Acculturation and mental health. In P. Dasen J. Berry and N. Sartorius (Eds). *Health and Cross-Cultural Psychology*. Sage, London. 1988.

[251] Kohen D. (ed). *Women and Mental Health.* Routledge. London; 2000.

[252] Jenkins R. Demographic aspects of stress. In: *Personality and stress: Individual Differences in the Stress Process (Wiley Series on Occupational Stress).* C. Cooper and R. Payne (eds). Chichester: John Wiley; 1991.

[253] Ibid.

[254] Ibid.

[255] Craft N. Women's Helath. *British Medical Journal*, a. 'Women's health is a global issue'. 1997; 315: 1154-7; b. 'Life span: conception to adolescence'. 315:1227-30; c. 'The childbearing years and after'. 315:1301-4.

[256] Kohen D. (ed). *Women and Mental Health.* Routledge. London; 2000.

[257] Carballo M and Nerukar A. Migration, Refugees and Health Risks. *Supplement*. June 2001; 7: 556-560.

[258] Walters V. Stress, anxiety and depression: women's accounts of their health problems'. *Social Science and Medicine.* 1993; 36(4):393-402.

[259] Gove W. Gender differences in mental and physical illness: the effect of fixed roles and nurturing roles. *Social Science and Medicine*. 1984; 19(2): 77-91.

[260] Gunter h., Meyer R., Ursula P. *Krank in der Fremde: Eine Tagung der Evangelischen Akademie vom 1-3 November*. Bad Segberg; 1986.

[261] WHO. *Psychosocial factors and health: Monitoring the psychosocial work environment and workers' health*. WHO, Geneva; 1984.

[262] O'Rouke M. The influence of social, employment, and health factors on the psychological well-being of employed women. *Issues in Mental Health Nursing*. 1986; 8:121-141.

[263] Campbell A. *The sense of well-being in America.* New York, McGraw Hill; 1981.

[264] Ministerium für Frauen, Jugend, Familie und Gesundheit des Landes Nordrhein-Westfalen. *Gesundheit von Zuwanderern in Nordrhein-Westfalen*. Düsseldorf; 2000.

[265] Berlin Institute for population and development: www.berlin-institut.org/pdfs/müenzinternationale%migrantion.pdf (Accessed on 3.06.2005).

[266] Seyle H. *Stress without Distress*. New York: J. B. Lippincott; 1974.

[267] Werner J. Stressors and health outcomes: Synthesis of nursing research, 1980-1990. In J. Barnfather and B. Lyon (ed.). *Stress and coping: State of the science and implications for nursing theory, research, and practice* (p. 11-41). Indianapolis, Sigma Theta Tau Center Nursing Press; 1993.

[268] Cooper C. Job distress: recent research and the emerging role of the clinical occupational psychologist. *Bulletin of the British Psychological Society*. 1986; 39:325-31.

[269] Hennekens C and Buring J. *Epidemiology in Medicine*. USA: Little Brown; 1987.

[270] Website on the city of Cologne: www.koeln.de/content/info_zahlen.html. (Accessed on 16.04.2004).

[271] Website on the city of Cologne: www.stadt-koeln.de. (Accessed in April, May, June 2004).

[272] German Telecommunication. *Telephone book of the city of Cologne*; 2004.

[273] Krueger R. *Focus Groups. A Practical Guide or Applied Research*. Sage, London; 1994.

[274] Basch C. Focus group interview: an underutilized research technique for improving theory and practice in health education. *Health Education Quarterly*. 1987; 14: 411-448.

[275] Arbeitsgruppe Migration und Gesundheit für die Stadt Köln und Gesundhetiszentrum für Migrantinnen. *Kölner Gesunheitswegweiser für Migrantinnen und Migranten*; 2003.

[276] Statistisches Jahrbuch Nordrhein-Westfalen. Landesamt für Datenverarbeitung und Staistik Nordrhein-Westfalen. Düsseldorf; 2003.

[277] Derogatis LR. Symptom Checklist Revised. *In: Handbook of psychiatric measures*. American Psychiatric Association; 2000:p.81-84.

[278] Bonicatto S, Dwe M, Soria J, Seghezzo M. Validity and reliability of SCL-90 in an Argentine population sample. *Soc Psychiatr Epidemiol*. 1997; 32:332-338.

[279] Haver B. Screening for psychiatric co-morbidity among female alcoholics: the use of a questionnaire (SCL-90) among women early in their treatment program. *Alcohol Alcohol*. 1997; 32:725-730.

[280] Ghazinour M, Richter J, and Eisemann M. Quality of life among Iranian refugees settled in Sweden. *Journal of Immigrant Health*. 2004; 6(2):71-81.

[281] Zack M, Toneatto T, Streiner D. The SCL-90 factor structure in comorbid substance abusers. *J Subst Abuse*. 1998; 10:85-101.

[282] Akiyoshi J, Yamuachi C, Furota M, Katsugari S, Kohno Y, Yamamoto Y et al. Relationship between SCL-90, Maudsley Personality Inventory and CCK-4 intracelluar calcium in T cells. *Psychiatry Res*; 1998, 81:381-386.

[283] Morgan C, Wiederman M, Magnus R. Discriminant validity of the SCL-90 dimensions of anxiety and depression. *Assessment.* 1998; 5:197-201.

[284] Khamis V. Psychological distress and well-being among traumatized Palestinian women during the Intifada. *Soc. Sci. Med*. 1998; 8:1033-1041.

[285] Numan N. Exploration of adverse psychological symptoms in Yemeni khat users by the Symptoms Checklist-90. *Addiction*. 2004; 99:61-65.

[286] Humaida M, Briahim I, Abd-Alfattah M, and Eisa A. Prevalence rates of obsessive-compulsive symptoms, obsessive-compulsive disorder and psychiatric comorbidity among secondary-school students in rural Egypt. *International Journal of Mental Health and Addiction*; Nov. 2004.

[287] Derogatis L. *SCL-90: Administration, Scoring and Procedure Manual I*. Baltimore: John Hopkins University Press; 1977.

[288] Derogatis L, Lipman R, Covi L. SCL-90 : An outpatient psychiatric rating scale-preliminary report. *Psychopharmacology Bulletin*. 1973; 9,1:13-27.

[289] Derogaits L, Rikels K, and Rock A. The SCL-90 and the MMPI: A step in the validation of a new self-report scale. *British Journal of Psychiatry*. 1976; 128: 280-289.

[290] Derogatis L. *SCL-90-R.: Administration, scoring and procedure manual II*. Towson, MD: Clinical Psychometric Research, Baltimore; 1983.

[291] Jacobson N, Truax P. Clinical significance: A statistical approach to defining meaningful changes in psychotherapy research. *J Consult Clin Psychol*. 1991; 59:12-19.

[292] Derogatis LR. *SCL-90-R.: Administration, scoring and procedure manual II*. Towson, MD: Clinical Psychometric Research, Baltimore; 1983.

[293] Ibid.

[294] Derogatis LR. Symptom Checklist Revised. In *Handbook of psychiatric measures*. American Psychiatric Association. 2000:p.81-84.

[295] Albehairy A. *Symptom Checklist-90 (SCL-90) Arabic form*. Cairo, Egypt. Al-Nahda Al-Messria Library; 1984.

[296] Abdallah T. *A study on the validity and reliability of SCL-90-R*. Unpublished manuscript. Child and Family Center, Jerusalem. Israel; 1992.

[297] Abu Tahina A. Mental health consequences of imprisonment and torture among Palestinian men in Gaza. GCMHP-Publication (in Arabic); 1999.

[298] Khamis V. Psychological distress and well-being among traumatized Palestinian women during the Intifada. *Soc. Sci. Med*. 1998; 8:1033-1041.

[299] Derogatis LR. *SCL-90-R.: Administration, scoring and procedure manual II*. Towson, MD: Clinical Psychometric Research, Baltimore; 1983.

[300] Rauter U, Leonard C, Swett C. SCL-90-R factor structure in an acute, involuntary, adult psychiatric inpatient sample. *J Clin Psychol*; 1996. 52, 6:25-629.

[301] Fitch M, Osoba D. Iscoe N, Szalai J. Predicting psychological distress in patients with cancer: Conceptual basis and reliability evaluation of a self-report questionnaire. *Anticancer Res*. 1995; 15:1533-1542.

[302] Derogatis L, Rickels K, Roch A. The SCL-90 and the MMPI: a step in the validation of a new self-report scale. *Br J Psychiatry*. 1976; 129:280-289.

[303] Derogatis LR. *SCL-90-R.: Administration, scoring and procedure manual II*. Towson, MD: Clinical Psychometric Research, Baltimore; 1983.

[304] Derogatis LR. Symptom Checklist Revised. In *Handbook of psychiatric measures*. American Psychiatric Association. 2000:p.81-84.

[305] Jacobson E. *Progressive relaxation.* University of Chicago Press, Chicago; 1929.

[306] Schultz j. Uebungsheft fuer das autogene Training *[A practice manual for autogenous training]*. Thieme, Leipzing; 1935.

[307] BUPA Guide to Healthy Living: 101 essential tips. London; 2000.

[308] Website for the city of Cologne: www.stadt-koeln.de (Accessed June 2004).

[309] World Statistics: www.nationmaster.com/encyclopedia/Cologne (Accessed on 30.05.2005).

[310] Statistisches Jahrbuch Nordrhein-Westfalen. Landesamt für Datenverarbeitung und Staistik Nordrhein-Westfalen. Düsseldorf, 2003.

[311] Amt für Stadtentwicklung und Statistik - Statistisches Informationssystem, 2002, Köln.

[312] Rommel A, Weilandt C. Health Monitoring of the Migrant Population in Northrhine-Westphalia, Germany: Experiences, Implications, and Perspectives. *Croatian Medical Journal*. 2002; 43(2): 174-178.

[313] Amt für Stadtentwicklung und Statistik. *Kölner Statischtische Nachrichten Nr. 2*; Köln, 2003 .

[314] Ibid.

[315] www.nationmaster.com/encyclopedia/Cologne (Accessed on 30.05.2005).

[316] Seifert B. Report on the conditions of the youth in Germany 2000 and selected data on the situation of the youth in Cologne in the time of 1986-1997. *European Youth Observatory. Cologne*; 2000.

[317] Amt für Kinder, Jugend und Familie/ Amt für Stadtentwicklung und Statistik.Köln., 2003.

[318] Amt für Soziales un Senioren/Amt für Stadtentwicklung und Statistik, Köln, 2003.

[319] Statistisches Jahrbuch Nordrhein-Westfalen. Landesamt für Datenverarbeitung und Staistik Nordrhein-Westfalen. Düsseldorf, 2003.

[320] Website for the city of Cologne: www.stadt-koeln.de, (Accessed in April, May, June 2004).

[321] Schiner S. Schon ein Händedruck kann eine Muslimin in Verlegenheit bringen. *Ärzte Zeitung*, 28.08.2003.

[322] Amt für Stadtentwicklung und Statistik - Statistisches Informationssystem, 2002. Köln.

[323] Statistisches Jahrbuch Nordrhein Westfalen. Landesamt für Datenverarbeitung und Statistik. Nordrhein Westfalen. 2003.

[324] Razum O. Cardiovascular mortality of Turkish nationals residing in Germany. www.hyg.uni-heidelberg.de (Accessed 3.2.2005).

[325] Statistisches Jahrbuch Nordrhein-Westfalen. Landesamt für Datenverarbeitung und Staistik Nordrhein-Westfalen. Düsseldorf; 2003.

[326] Landesamt für Datenverarbeitung und Statistik NRW: Wanderungsstatistik, 2003.

[327] Seifert B. Report on the conditions of the youth in Germany 2000 and selected data on the situation of the youth in Cologne in the time of 1986-1997. *European Youth Observatory*. Cologne; 2000.

[328] Regional Statistical Office of Northrhine-Westphalia; 2002.

[329] Razum O, Zeeb H, Rohrmann S. The 'healthy migrant effect' –not merely a fallacy of inaccurate denominator figures. *Int. J Epidemiology*. 2000; 29:191-2.

[330] Schmidt-Fink E. The interesting and exotic become suspicious neighbors Arab migrants in Germany before and after September 11. In a lecture held at the DAAD Cairo; 2002.

[331] Website for the city of Cologne: www.koeln-stadt.de (Accessed in June 2004).

[332] Ministerium für Frauen, Jugend, Familie und Gesundheit des Landes Nordrhein-Westfalen. *Gesundheit von Zuwanderern in Nordrhein-Westfalen*. Düsseldorf; 2000.

[333] Federal Ministry of Health. *Germany's report to the WHO Regional Office for Europe.* Robert Koch- Institute; 1997a.

[334] Statistisches Jahrbuch Nordrhein-Westfalen. Landesamt für Datenverarbeitung und Staistik Nordrhein-Westfalen. Düsseldorf; 2003.

[335] Ministerium für Frauen, Jugend, Familie und Gesundheit des Landes Nordrhein-Westfalen. *Gesundheit von Zuwanderern in Nordrhein-Westfalen*. Düsseldorf; 2000.

[336] Arbeitsgruppe Migration und Gesundheit für die Stadt Köln und Gesundhetiszentrum für Migrantinnen. *Kölner Gesunheitswegweiser für Migrantinnen und Migranten*; 2003.

[337] Bericht der Beauftragten der Bundesregierung für Ausländerfragen über die lager der Ausländer in der Bundesrepublik Deutchland. Berlin und Bonn; 2000.

[338] Landesamt für Datenverarbeitung und Statistik NRW 1990-1997. Particular calculations www.lds.nrw.de/statistik (Accessed on April 4th, 2004).

[339] Rommel A, Weilandt C. Health Monitoring of the Migrant Population in Northrhine-Westphalia, Germany: Experiences, Implications, and Perspectives. *Croatian Medical Journal*. 2002; 43(2): 174-178.

[340] Bericht der Beauftragten der Bundesregierung für Ausländerfragen über die lager der Ausländer in der Bundesrepublik Deutchland. Berlin und Bonn; 2000.

[341] Rommel A, Weilandt C. Health Monitoring of the Migrant Population in North Rhine-Westphalia, Germany: Experiences, Implications, and Perspectives. *Croatian Medical Journal*. 2002; 43(2): 174-178.

[342] Weilandt C, Joksimovic L, Klaes L, van den Toorn S, Winkler J. *The health of migrants in North Rhine- Westphalia (in German).* Düsseldorf: Ministry of Women, Youth, Family, and Health of the Federal State of Northrhine-Westphalia; 2000.

[343] World news from World Newspapers: www.worldpress.org/profiles/Germany (Accessed on 30.05.2005).

[344] Ibid.

[345] OECD. *Health data*; 1999.

[346] Ibid.

[347] European Observatory on Health Care Systems. *Health Care Systems in Transition: Germany*; 2000.

[348] Federal Ministry of Health. *Germany's report to the WHO Regional Office for Europe*. Robert Koch-Institute; 1997a.

[349] Zeeb H, Razum O. Breast cancer among Turkish women in Germany –epidemiology and research agenda. *Zentralbl Gynakol*; 2004, 126: 77-80.

[350] Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd Edition. Erlbaum, Hillsdale, NJ; 1988.

[351] Khamis V. Psychological distress and well-being among traumatized Palestinian women during the Intifada. *Soc. Sci. Med*. 1998; 46, 8:1033-1041.

[352] Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd Edition. Erlbaum, Hillsdale, NJ; 1988.

[353] Ibid.

[354] Gesundheitsamt der Stadt Köln. *Kölner Gesundheitswegweiser für Migrantinnen und Migranten*. Gün A, Thol C and ünal A (ed.). 2003; Köln.

[355] Ibid.

[356] Familien branchbuch Köln; 2005/2006.

[357] Ministerium für Frauen, Jugend, Familie und Gesundheit des Landes Nordrhein-Westfalen. *Gesundheit von Zuwanderern in Nordrhein-Westfalen.* Düsseldorf; 2000.

[358] Ibid.

[359] Grube M. Darstellung eines türikischedeutschsprachigen Verbundmodells zwischen psychiatrischer Klinik und psychosozialer Beratungsstelle. In: E. Koch, M. Özek und W. Pfeiffer (Hrsg.). *Psychologie und Pathologie der Migration*. Freiburg: Lambertus, 199-205; 1995.

[360] www.parenting-forum.org.uk News Bulletin. Sept. 2003; page 6.

[361] Bay T, Stein B, Wirsching M. Möglichkeiten zur Verbesserung der psychosomatischen Grundversorgung von Migranten in der Hausarztpraxis. In: F. Nestmann und T. Niepel. *Beratung von Migranten*. Berlin: Verlag für Wissenschaft und Bildung, 211-229; 1993.

[362] Steten K und Kock E. Modell stationärer Versorgung von türkischen Patienten in einem psychiatrischen Krankenhaus. In: E. Koch, M. Özek und W. Pfeiffer (Hrsg.). *Psychologie und Pathologie der Migration*. Freiburg: Lambertus, 194-198; 1995.

363 Selbsthilfe Kontakt und Informations Stelle: www.sekis-berlin.de/sekis-db/baum.php (Accessed in May 2005).

[364] Frauenbuero Landeshaupstadt Duesserldrof: www.duesseldorf.de/frauen/download/migrantinnen.pdf (Accessed May 2005)

[365] Landesamt fuer Datenverarbeitung und Statistik Nordrhein-Westfalen: www.ldz-nrw.de/english/gle/gle_pro.html (Accessed on 5.02.2005).

[366] www.marieluisebeck.de/Themen/Einwanderung.html (Accessed on 3.06.2005).

[367] Van der Klink J, Blonk R, Schene A, and van Dijk F. The benefits of interventions for work related stress. *Am J Public Health*. 2001; 91:270-276.

[368] Salmon P. Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clin Psychol Rev*. 2001; 21:33-61.

[369] Murphy L. Stress management in work settings: a critical review of the health effects. *Am J Health Promot*. 1996; 11:112-135.

[370] Vickers A, Zollman C. ABC of complementary medicine. Hypnosis and relaxation therapies. *BMJ*. 1999; 319:1346-1349.

[371] Edwards D, Burnard P. A systematic review of stress and stress management interventions for mental health nurses. *Journal of Advanced Nursing*. 2003; 42,2:169-200.

[372] Van der Klink J, Blonk R, Schene A, and van Dijk F. The benefits of interventions for work related stress. *Am J Public Health*. 2001; 91:270-276.

[373] Salmon P. Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clin Psychol Rev*. 2001; 21:33-61.

[374] Gauvin L, Spence J. Psycholgy research on exercise and fitness: current research trends and future challenges. *Sprot Psychol*; 1995; 9:434-448.

[375] Steptoe A. And Butler N. Sports participation and emotional wellbeing in adolescents. *Lancet*. 1996; 347:1789-1792.

[376] Goleman, D. *What is your stress style?* In: The Annual Editions Series. Dushkin Publishing Group, Guildford; 1992.

[377] Jacobson E. *Progressive relaxation*. Chicago, University of Chicago Press; 1938.

[378] Schultz J, and Luthe W. *Autogenic training: A psychophysiologic approach in psychotherapy*. New York, Grune and Stratton; 1959.

[379] Lazarus R and Folkman S. *Stress, appraisal and coping*. Jason Aronson, New York; 1984.

[380] Meichenbaum D and Deffenbacher J. Stress inoculation training. *Couns Psychol*. 1988; 16:69-90.

[381] Scott J. Cognitive therapy for depression. *Br Med Bull*. 2001; 57:101-113.

[382] Heimberg R. Cognitive behavioral therapy for social anxiety disorder: current status and future directions. *Biol Psychiatry*. 2002; 51:101-108.

[383] Goleman, D. *What is your stress style?* In: The Annual Editions Series. Dushkin Publishing Group, Guildford; 1992.

[384] Helmann C. *Culture, Health and Illness*. Butterworth and Co. (publishers), Ltd., London; 2000.

[385] Hjelm, K, Bard K, Nyberg P, Apelqvist J. Religious and cultural distance in beliefs about health and illness in women with diabetes mellitus of different origin living in Sweden. *International Journal of Nursing Studies*. 2003; 40:627-643.

[386] Gunter h., Meyer R., Ursula P. *Krank in der Fremde: Eine Tagung der Evangelischen Akademie vom 1-3 November*. 1985. Bad Segberg, 1986.

[387] Helmann C. *Culture, Health and Illness*. Butterworth and Co. (publishers), Ltd., London; 2000.

[388] Weilandt C, Joksimovic L, Klaes L, van den Toorn S, Winkler J. *The health of migrants in Northrhine- Westphalia (in German)*. Düsseldorf: Ministry of Women, Youth, Family, and Health of the Federal State of Northrhine-Westphalia; 2000.

[389] Razum O, Zeeb H, Adgün HS, Yilmaz S. Low overall mortality of Turkish residents in Germany persists and extends into a second generation: merely a healthy migrant effect? *Trop Med Int Health*. 1998; 3:297-303.

[390] Ikilic I. *Der muslimisce Patient: Medizinethische Aspekte des muslimischen Krankheitsverständnisses in einer wertpluralen Gesellschaft*. Münster, Hamburg, London; 2002.

[391] Hjelm K, Apelqvist J, Nyberg P, Sundquist J, Isacsson A. Health, health care utilization and living conditions in foreign-born diabetic patients in southern Sweden. *Journal of Internal Medicine*. 1997; 242: 131-141.

[392] Carballo M, Divino J and Zeric D. Migration and health in the European Union. *Trop Med Int Health*. 1998; 3(12):936-44.

[393] Akter S. *Immigration and identity*. Northvale. New Jersy. Jason Aronson Inc.; 1999.

[394] Ibid.

[395] Bandura A. Exercise of personal and collective efficacy in changing societies. In: Bandura A (ed.). *Self-Efficacy in Changing Societies*. Cambridge University Press, New York. Pp 1-45; 1995.

[396] Kleinman A. *Patients and Healers in the Context of Culture*. University of California Press, London; 1980.

[397] Hjelm K, Bard K, Nyberg P, and Apelqvist J. Religious and cultural distance in beliefs about health and illness in women with diabetes mellitus of different origin living in Sweden. *International Journal of Nursing Studies*. 2003; 40: 627-643.

[398] Lambert G, Reid C, Kaye D, Jennings G and Esler M. Effect of sunlight and season on serotonin turnover in the brain. *Lancet*. 2002, 360:1840-42.

[399] Dam H, Jakobsen K, Mellerup E. Prevalence of winder depression in Denmark. *Acta Psychiatr Scand*.1998 Jan, 97:1-4.

[400] Webster's Dictionary. 10th edition. *Merriam-Webster's Collegiate Dictionary*. Springfield, Massachusetts, USA; 1993.

[401] Zeeb H., Baune B, Vollmer W, Cremer D and Krämer A. Health Situation of and Health Service Provided for Adult Migrants: A Survey Conducted During School Admittance Examination. *Gesundheitswesen*. 2004; 66:76-84.

[402] Feinson M, Popper M. and Handelsman M. *Utilization of public ambulatory mental health service in Israel: A focus on age and gender patterns*. State of Israel Ministry of Health; 1992.

[403] Haasen C, Lambert M, Yagdiran O, Krausz M. Psychiatric disorders among migrans in Germany: prevalence in a psychiatric clinic and implications for services and research. Eur Psychiatry. 1997;12:305-310.

[404] Gillam S, Plamping D, McClenahan J, and Harries J. *Community Oriented Primary Care*. London: King's Fund;1994.

[405] Stronks K, Ravelli AJ, Reijneveld S. Immigrants in the Netherlands: Equal access for equal needs? *J Epidemiol Community Health.* 2001; 55:701-7.

[406] Bavington J. The Bradford experiment. In: *Intercultural Therapy.* Kareem J and Littlewood R (eds). Oxford, Blackwell; 1992.

[407] Eisler R. and Hersen M. (ed.). *Handbook of Gender Culture and Health*. Lawrence Erlbaum Associates. New Jersy; 2000.

[408] International Organization of Migration. *Migration and Health. Innovation in Social Sciences Research*. 1993; 6(1): 5-7.

[409] Nickel-Khorshov Yar R. Kulturspezifische Ansätze in der Therapie- Interaktionsprobleme am Beispiel türkischer Patienten. *Zeitschrift für Transaktionsanalyse*. 1991; 3:131-139.

[410] Hofstede G. *Culture's Consequences: International Differences in Work-Related Values*. Sage Publications, London; 1984.

[411] Anderson J. Immigrant women speak of chronic illness: the social construction of the devalued self. *Journal of Advanced Nursing*. 1991; 16, 710-717.

[412] Triandis H. Culture and conflict. *International Journal of Psychology*. 2000; 35:145-152.

[413] Hjelm K, Apelqvist J, Nyberg P, Sundquist J, Isacsson A. Health, health care utilization and living conditions in foreign-born diabetic patients in southern Sweden. *Journal of Internal Medicine*. 1997; 242: 131-141.

[414] Sundquist J. Migration, equality and access to health care services. *J Epidemiol Community Health*. 2001; 55:691-692.

[415] Sundquist J. Ethnicity, social class and health. A population-based study on the influence of social factors on self-reported illness in 223 Latin American refugees, 333 Finnish and 126 south European labour migrants and 841 Swedish controls. *Soc Sci Med*. 1995; 40:777-87.

[416] Carballo M and Mboup Mourtala. International migration and health. Global Commission on International Migration (GCIM); 2005.

[417] Haasen C, Lambert M, Yagdiran O, Krausz M. Psychiatric disorders among migrants in Germany: prevalence in a psychiatric clinic and implications for services and research. *Eur Psychiatry*. 1997;12:305-310.

[418] Committee on Migration, Refugees and Demography. *Report on Health conditions of migrants and refugees in Europe*. Lord Ponsonby, UK, Specialist Group; 2000.

[419] Bengtsson-Tops A, Hannsson L. The validity of Antonovsky's Sense of Coherence measure in a sample of Schizophrenic patients living in the community. *J Adv Nurs.* 2001;33:432-438.

[420] Flannery R. and Flannery J. Sense of coherence, life stress and psychological distress: A prospective methodological inquiry. *J Clin Psychol*. 1990; 46:415-420.

[421] Rodin J, Salovey P. Health psychology. *Ann Rev Psychol*. 1989;40:533-579.

[422] Ghazinour M, Richter J, and Eisemann M. Quality of life among Iranian refugees resettled in Sweden. *Journal of Immigrant Health*. 2004; 6:71-81.

[423] Van Tuilburg M., Vingerhoets A. and Van Heck G. Homesickness: a review of the literature. *Psychological Medicine*. 1996; 26:899-912.

[424] Carden A. and Feicht R. Homesickness among American and Turkish college students. *Journal of Cross-Cultural Psychology*. 1991; 22:418-428.

[425] Van Tuilburg M., Vingerhoets A. and Van Heck G. Homesickness: a review of the literature. *Psychological Medicine*. 1996; 26:899-912.

[426] Fisher S. and Hood B. The stress of the transition to university: a longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. *British Journal of Psychology*. 1987; 78: 425-441.

[427] Bischoff A. *Caring for migrant and ethnic minority patients in European hospitals? Review of effective interventions (1st Draft).* Ludwig Boltzmann Institute for Sociology of Health and Medicine, Vienna; 2003.

[428] Tse T. Islamic Community Worker Training Program from Management of Depression. *Australian e-Journal for the Advancement of Mental Health 1,2*. (www.auseinet.com/journal/vo1iss2/Tse.pdf) (Accessed on June 11, 2004).

[429] Haasen C, Lambert M, Mass R, Frausz. Impact of ethnicity on the prevalence of psychiatric disorders among migrants in Germany. *Ethn Health.* 1998; 3:159-65.

[430] Jeppesen E. Obstetric health care offered to Turkish immigrant women-a quality assessment. *Ugeskr Laeger*. 1993; 155:3849-54.

[431] McGuire S and Georges J. Undocumentedness and liminality in health variables. *ANS Adv Nurs Sci.* 2003 July-Sep; 26:185-95.

[432] Carballo M and Mboup Mourtala. International migration and health. Global Commission on International Migration (GCIM); 2005.

[433] Al-Sabiae N, Dinicola V. Psycho-social adaptation of Saudi Students and Spouses in Canada. *The Arab Journal of Psychiatry*. 1995; 6,2:20-39.

[434] Adler P. The transitional experience: an alternative view of culture shock. *The Journal of Humanistic Psychology*. 1975; 15,4:13-23.

[435] Pederson P. *A Handbook for Developing Multicultural Awareness*. American Counseling Association. VA; 1994.

[436] Sarnoff I, Zimbardo P. Anxiety, fear and social affiliation. *J Abnorm Soc Psychol*. 1966; 62:356-363.

[437] Hovey J. and King C. Acculturative stress, depression and suicidal ideation among immigrant and second-generation Latino adolescents. *Journal of American Academy* of Child and Adolescent Psychiatry. 1996; 35:1183.

[438] Bhugra D and Bhui K. African-Caribbeans and Schizophrenia: contributing factors. *Advances in Psychiatric Treatment*. 2001; 7:283-291.

[439] Berry J and Sam D. Acculturation and adaptation. In J. Berry, M Segall and Kagiticibasi(Eds.). *Handbook of cross-cultural psychology*. Boston, Allen and Bacon. 3:291-336; 1997.

[440] Berry J. Acculturation and adaptation in a new society. *International Migration*. 1990; 30:69-86.

[441] Berry J, Kim U, Minde T and Mok D. Comparative studies of acculturative stress. *International Migration Review*. 1987; 21:491-511.

[442] Hofstede G. *Culture's Consequences: International Differences in Work-Related Values*. Sage Publications, London; 1984.

[443] Webster's Dictionary. 10th edition. *Merriam-Webster's Collegiate Dictionary*. Springfield, Massachusetts, USA; 1993.

[444] Amen D. Post-Vietnam stress disorders. A metaphor for current and past life events. *American Journal of Psychotherapy*. 1985; 41:580-586.

[445] Ruch L, and Leon J. Sexual assault trauma and trauma change. *Women and Health*. 1983; 8:5-21.

[446] Groenland E. Structural elements of material well-being. An empirical test among people on social security. *Social Indicators Research*. 1990; 22:367-384.

[447] Veenhoven R. Is happiness relative? *Social Indicators Research*. 1991; 24:1-34.

[448] Barakat H. *The Arab World, Society, culture, and state*. Los Angeles. University of California Press; 1993.

[449] Al-Krenawi A. and Graham J. Gender and biomedical/traditional mental health utilization among the Bedouin-Arab of the Negev. *Culture, Medicine and Psychiatry*. 1999; 23, 2:219-243.

[450] El-Islam M. Arabic cultural psychiatry. *Transcultural Psychiatric Research Review*. 1982; 19, 1:5-24.

[451] Berkmann L, Glass T, Brissetter I, and Seeman T. From social integration to health: Durkheim in the new millennium. *Social Science and Medicine*. 2000; 51:843-857.

[452] Chung R, and Kagawa-Singer M. Predictors for psychological distress among Southeast Asian refugees. *Social Science and Medicine*. 1993; 36: 631-639.

[453] Rousseau C, Drapeau A, and Corin E. The influence of culture and context on the pre- and post-migration experience of school-aged refugees from Central America and Southeast Asia in Canada. *Social Science and Medicine*. 1997; 44:1115-1127.

[454] Cohen S. Psychosocial models of the role of social support in the etiology of physical disease. *Health Psychol.* 1988; 7:269-297.

[455] Ibid.

[456] Ahmad M and Ahmad N. Islamic Psychology: Islam and Psychosomatic Medicine. (www.islamset.com/psycho/nikhat.html) (Accessed in April 2004).

[457] Hjelm K, Bard K, Nyberg P, and Apelqvist J. Religious and cultural distance in beliefs about health and illness in women with diabetes mellitus of different origin living in Sweden. *International Journal of Nursing Studies*. 2003; 40: 627-643.

[458] Khamis V. Psychological distress and well-being among traumatized Palestinian women during the Intifada. *Soc. Sci. Med*. 1998; 46, 8:1033-1041.

[459] Hjärpe J. *Islam Doctrine and Pattern of Life.* Norstedts Förlag AB. Stockhom; 1992

[460] Thomas S. and Wimbush F. The journey embedded in psycho-physiological disorders. In V. Carson (ed). *Mental health nursing*. Philadelphia: Saunders; 1999.

[461] Ihdayhid A. *Islamic Psychology*. A presentation to a concurrent session at the multicultural women health and well-being convention. Australia; 23-24 Oct; 2003.

[462] Ibid.

[463] Ibid.

[464] Takeda E, Terao J, Nakaya Y et al. Stress control and human nutrition. *J Med Invest*. 2004; 51:139-45.

[465] Personal Development: Tools for Transformation: www.trans4mind.com (Accessed on 3.07.2005).

[466] Mishra S, Conner R, Magana J (ed.) *AIDS. Crossing Borders: The Spread of HIV Among Migrant Latinos.* Colorado, Westview Press; 1996.

[467] Abdallah T. (Unpublished study received from the author July 2004).

[468] Ete E. Ethnomedizinische Aspeket der Interaktion mit türkishen Patienten. In: E. Koch, M. Özek and W.M. Pfeiffer (editors). *Psychologie und Pathologie der Migratio*. Freiburg: Lambertus, S. 209-216; 1995.

[469] Böker W. *Psychopathological Reactions Among Foreign Laborers in Europe*. Edited by L Eitinger and D. Schwarz; 1981.

[470] Al-Krenawi A., Graham J., and Kandah, J. Gendered Utilization Differences of Mental Health Services in Jordan. *Community Mental Health Journal*. 2000; 36,5: 501-511.

[471] Racy J. Somatization in Saudi Arabian women: A therapeutic challenge. *British Journal of Psychiatry.* 1980; 137:212-216.

[472] Mirdal G. The condition of "tightness": the somatic complaints of Turkish migrant women. *Acta Psychiatica Scandinavica*. 1985; 71:287-296.

[473] Mirdal G. Stress and distress in migration: problems and resources of Turkish women in Denmark. *International Migration Review*. 1984; 18, 4: 984-1002.

[474] Savaya R. Attitudes towards family and marital counseling among Israeli Arab women. *Journal of Social Service Research*. 1995; 21-1:35-51.

[475] Racy J. Somatization in Saudi Arabian women: A therapeutic challenge. *British Journal of Psychiatry*. 1980; 137:212-216.

[476] Al-Krenawi A., Graham J., and Kandah, J. Gendered Utilization Differences of Mental Health Services in Jordan. *Community Mental Health Journal*. 2000; 36,5: 501-511.

[477] Tse T. Islamic Community Worker Training Program from Management of Depression. *Australian e-Journal for the Advancement of Mental Health 1,2.* (www.auseinet.com/journal/vo1iss2/Tse.pdf).

[478] Al-Krenawi A., Graham J., and Kandah, J. Gendered Utilization Differences of Mental Health Services in Jordan. *Community Mental Health Journal*. 2000; .36,5: 501-511.

[479] Tse T. Islamic Community Worker Training Program from Management of Depression. *Australian e-Journal for the Advancement of Mental Health 1,2*. (www.auseinet.com/journal/vo1iss2/Tse.pdf).

[480] Silveira E., Skoog I., Sundh V., Allebeck P., Steen B. Health and well-being among 70-year-old migrants living in Swede- results from the H 70 gerontological and geriatric population studies in Goteborg. *Soc Psychiatry Psychiatr Epidemiol*. 2002; 37:13-22.

[481] Pearlin L and Schooler C. The structure of coping. Journal of Health and Social Behavior. 19:2-21; 1978.

[482] Hirschfeld R, Klerman G, Lavori P, Keller M, Griffith P, and Coryell W. Premorbid personality assessment of first onset of major depression. *Archives of General Psychiatry*. 1989; 46:345-350.

[483] Gruen R. *Stress and depression: Toward the development of integrative models. In Handbook of Stress: Theoretical and clinical aspects*. Eds. L Goldberger, S Breznitz, pp550-669; 1993.

[484] Glesser G, Green B and Winget C. *Prolonged psychosocial affects of a disaster: A study of the Buffalo Greek* . Academic Press, New York; 1981.

[485] Lopez-Ibor J, Canas S and Rodriguez-Gamazo M. Psychological aspects of the toxic oil syndrome catastrophe. *British Journal of Psychiatry*. 1985; 147:352-365.

[486] Lee R. Passage from the homeland. *Canadian Nurse*. 1994; Oct.:27-32.

[487] Smart J and Smart D. Acculturative stress: The experience of the Hispanic immigrant. *The counseling Psychologist*. 1995; 23:25-42.

[488] Gove W. Sex, marital status, and mental illness. *Social Forces*. 1978; 51:34-55.

[489] Barnett R. *Multiple roles, gender and psychological distress. In Handbook of stress: Theoretical and clinical aspects.* Eds. L. Glodgerger and S. Breznitz, pp 427-445. The Free Press, New York; 1993.

[490] Landesamt fuer Datenverarbeitung und Statistik Nordrhein-Westfalen (www.ldz-nrw.de (Accessed on 5.2.2005).

[491] Pearlin L. *The social context of stress. In Handbook of stress: Theoretical and clinical aspects.* Eds. L Goldberger and S. Breznits, pp 303-315. The Free Press, New York; 1993.

[492] Gruen R. *Stress and depression: Toward the development of integrative models. In: Handbook of stress: Theoretical and clinical aspects.* Eds. L Goldberger and S. Breznits, pp 550-569. The Free Press, New York; 1993.

[493] McIntyre C, Watson D, and Cunningham A. The effects of social interaction, exercise, and test stress on positive and negative affect. *B Psychonomic Soc*. 1990; 28:141-143.

[494] Zeeb H, Baune B, Vollmer W, Cremer D, Krämer A. Health Situation of and Health Service Provided for Adult Migrants- a Surery Conducted During School Admittance Examinations. *Gesundheitswesen.* 2004; 66:76-84.

[495] Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd Edition. Erlbaum, Hillsdale, NJ; 1988.

[496] Aroian K, Norris A and Chiang L. Gender differences in psychological distress among immigrants from the former Soviet Union. *Sex Roles*. 2003; 48, 1-2:39-51.

[497] Van Rhenen W, Blonk R, van der Klink J, van Dijk F, and Schaufeli W. *The effect of a cognitive and a physical stress-reducing program on psychological complaints*. International Archives of Occupational and Environmental Health; 2005.

[498] Benson H, Greenwood M, Klemchuk H. The relaxation response: psycho-physiologic aspects and clinical applications. *Int J Psychiatry Med*. 1975; 6:87-98.

[499] Barkham M and Shapiro D. Brief psychotherapeutic interventions for job-related distress: a pilot study of perspective and exploratory therapy. *Couns Psychol Q*. 1990; 3:133-147.

[500] Van der Klink J, Blonk R, Schene A, and van Dijk F. The benefits of interventions for work related stress. *Am J Public Health*. 2001; 91:270-276.

[501] McIntyre C, Watson D, and Cunningham A. The effects of social interaction, exercise, and test stress on positive and negative affect. *B Psychonomic Soc*. 1990; 28:141-143.

[502] Al-Ghazali A. 1096-7 Ihya' 'ulum al-din (The Revival of Religious Sciences). Ljnah Nashr al-Thaqafal al-Islamiyya printing company. Cairo, Egypt; 1937-8. (in Arabic).

[503] Hagedon J. Happiness and self deception: An old question examined by a new measure of subjective well-being. *Social Indicators Research*. 1996; 38:139-160.

[504] OECD. *The reform of health care: a comparative analysis of seven OECD countries*. Paris, Organization for Economic Cooperation and Development, (Health Policy Studies No. 2); 1992.

[505] WHO and European Commission. *Highlights on Health in Germany*; May 1999.

[506] Carballo M and Nerukar A. Migration, Refugees and Health Risks. Supplement. June 2001; 7: 556-560.