

Shaping Alcohol Health Literacy: A Systematic Concept Analysis and Review

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ABSTRACT

Background: This study uses an innovative methodology to understand the implications of applying the emerging concept of health literacy to other contexts using the example of alcohol. **Methods:** An evolutionary concept analysis combined with the principles and standards of the systematic review process enables a rigorous analysis of the conceptual representation of alcohol health literacy. **Key Results:** Alcohol health literacy includes a wide range of attributes that encompass many different health literacies beyond simply the capacity to understand alcohol-related harms and use that information in decision-making. Alcohol health literacy empowers people to understand alcohol marketing and messages and how alcohol information is distributed through social networks. It is an outcome of media-related alcohol education, and its consequences include health action skills and realistic expectancies of alcohol. **Discussion:** The focus on health literacy, which emphasizes not only individual skills but also draws attention to the social determinants of alcohol use and how alcohol health literacy is shaped by social networks and interactions, provides important lessons for alcohol health promotion interventions. Health literacy when applied to alcohol includes many different domains and the innovative method used here provides a framework to develop interventions that build health literacy in different contexts. [*HLRP: Health Literacy Research and Practice*. 2020;4(1):e3-e20.]

Health literacy has emerged as a key field of activity in health promotion and is a central pillar in the World Health Organization Shanghai statement (WHO, 2017). It states that both health and literacy are critical resources for everyday living and that health literacy directly affects people's ability to not only act on health information but also to take more control of their health as individuals, families, and communities and change those factors that constitute their health chances, such as access to healthy food, opportunities for physical activities, and active and informed involvement in health policy discussion (Nutbeam, 2000).

There has been a huge rise in interest in the concept of health literacy. In 2012, there were 17 definitions of health literacy and 12 conceptual models (Sørensen et al., 2012), but by 2016 a review found over 250 definitions (Malloy-Weir, Charles, Gafni, & Entwistle, 2016). One current widely accepted definition describes health literacy as “the motivation, knowledge and competencies to access, understand, appraise

and apply health information in order to make judgments and take decisions in everyday life” (Sørensen et al., 2012, p. 3). A number of explanations have been developed that describe the constructs and variables that either predict health literacy rates (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011) or describe the outcomes associated with the level of health literacy in a population [e.g., those living with diabetes (Schillinger et al., 2002), cancer (Morris et al., 2013), or children and young people (e.g., Paakkari, Torppa, Villberg, Kannas, & Paakkari, 2018; Parisod, Axelin, Smed, & Salanterä, 2016)]. An early analysis of the health literacy concept (Speros, 2005) described the defining attributes of health literacy as reading and numeracy skills, comprehension, the capacity to use information in health care decision-making, and successful functioning as a health care consumer including navigating health care systems. These attributes reflect the functional health literacy domains described by Nutbeam (2000) as (1) basic literacy skills applied to a health

context and the patient's ability to act upon that information regarding health risks and health service use; and (2) interactive health literacy, which is more advanced, and applies to patient literacy and social skills from different forms of communication and their ability to interact with health professionals. Besides functional and interactive health literacy, Nutbeam (2000) also included the domain of critical health literacy in his typology. An analysis of critical health literacy (Sykes, Wills, Rowlands, & Popple, 2013) revealed a distinct set of characteristics of advanced personal skills, health knowledge, information skills, effective interaction between service providers and users, and informed decision-making and empowerment, including political action, as key features of critical health literacy. In the evolving conceptual analysis of health literacy in recent years, different domains have been discussed; those commonly cited and generally applied are summarized in **Table 1**. These include public health literacy (Freedman et al., 2009), which draws attention to the importance of abilities to make decisions and act on the broad array of structural and environmental factors determining individual health and well-being. Distributed health literacy (Edwards, Wood, Davies, & Edwards, 2015) is another widely discussed domain that values the health literacy available within the social environment of an individual, such as friends, families, colleagues, and communities. Yet, despite the increase in the discourse around health literacy that some have likened to a social movement (Huber, Shapiro, & Gillaspay, 2012), little attempt has been made to analyze how the concept of health literacy is being applied to different contexts, especially not to alcohol.

Harmful use of alcohol and related health, social, and economic burden is a major public health priority (WHO, 2014). It is well known that there is a causal relationship between alcohol consumption and a range of mental and behavioral disorders, including alcohol dependence, noncommunicable conditions such as liver diseases, some cancers, cardiovascular diseases, as well as injuries resulting from violence and road accidents (WHO, 2011). In 2012, 5.1% of the global disease burden was due to the harmful use of alcohol, and an estimated 3.3 million people died from alcohol-related conditions that year (WHO, 2014). The harmful use of alcohol may also bring significant social harms, including violence, family disruption, and domestic violence (WHO, 2011). A range of societal factors, cultural norms, living environments, and social contexts may be associated with alcohol misuse (Sudhinaraset, Wigglesworth, & Takeuchi, 2016). Guidelines on safer drinking exist in many countries (Kalinowski & Humphreys, 2016), and there is recognition that people need information to support them to make healthier choices. Yet, studies show that awareness of alcohol-related harms and of safe drinking levels is low (e.g. Bowden, Delfabbro, Room, Miller, & Wilson, 2014; de Visser & Birch, 2012).

Although the relevance of health literacy to alcohol prevention and health promotion has been highlighted, to date no systematic analysis exists that addresses alcohol-related health literacy. Therefore, the aim of this study is to systematically identify available alcohol health literacy or similar concepts to apply a concept analysis, and to provide an understanding of alcohol health literacy and what would define a person's alcohol health literacy level.

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TABLE 1
Definitions of Relevant Health Literacy Domains

Health Literacy Domains	Associated Health Literacy Definitions
Functional health literacy	“Functional health literacy describes the possession of literacy skills sufficient to acquire and act on information on defined health risks and recommended health services use, and compliance with recommended health and disease management strategies” (Nutbeam, 2017, p. 7)
Scientific literacy applied to health literacy	“Science literacy refers to levels of competence with science and technology, including some awareness of the process of science. It includes the knowledge of fundamental scientific concepts, [the] ability to comprehend technical complexity, an understanding of technology and an understanding of scientific uncertainty and that rapid change in the accepted science is possible” (Zarcadoolas, Pleasant, & Greer, 2005, p. 197)
Interactive health literacy	“Interactive health literacy describes the possession of literacy skills required to extract, understand and discriminate between health information from different sources, and to apply new information to changing circumstances. . . . [T]hese literacy skills also enable a higher level of interaction with different sources of information, including with clinicians providing advice” (Nutbeam, 2017, p. 7-8)
Critical health literacy	“Critical health literacy describes the most advanced cognitive skills which, together with social skills can be applied to critically analyse health information from a variety of sources, and to use this information to exert greater control over both personal health decisions and wider influences on those decisions” (Nutbeam, 2017, p. 7-8)

TABLE 1 (continued)
Definitions of Relevant Health Literacy Domains

Health Literacy Domains	Associated Health Literacy Definitions
Distributed health literacy	Distributed health literacy describes that individuals draw “on the health literacy abilities, skills and practices of others as a resource to help them seek, understand and use health information to help manage their own health and make informed choices” (Edwards et al., 2015, p. 5)
Public health literacy	Public health literacy is defined “as the degree to which individuals and groups can obtain, process, understand, evaluate, and act upon information needed to make public health decisions that benefit the community” (Freedman et al., 2009, p. 448)

ress understanding where there may be competing, inconsistent, or underdeveloped perspectives (Rodgers, 2000). As concepts (such as health literacy) become more widely used in the literature, their use may become expanded and as a result become confused with similar concepts (Cowles, 2000), such as health education or empowerment (Sykes et al., 2013). Without such shared conceptual clarity, difficulties emerge in communicating, developing theory, operationalizing, measuring, or identifying outcomes associated with a concept. Introduced by Wilson (1963) in the 1960s and developed into several models in the 1980s (Rodgers, 1993), concept analysis is now an established research methodology, particularly within the field of nursing. Common to many of the models (Haase, Leidy, Coward, Britt, & Penn, 2000; Rodgers, 2000, 1993; Walker & Avant, 1995; Wilson, 1963) is the systematic analysis of key elements of the concept, such as (1) the attributes of the concept that refers to the key characteristics that define the concept, (2) references or what the concept is used to refer to, (3) antecedents or the factors that need to be in place for the concept to occur, (4) consequences or what happens as a result of the concept, and (5) surrogate or similar terms that could be used instead of the concept. Undertaking a concept analysis of alcohol health literacy can add to the body of work defining health literacy by identifying whether the concept acquires other attributes when applied to other topics, settings, or population groups.

METHODOLOGICAL FRAMEWORK

Concept analysis, as a research methodology, offers the opportunity to clarify, refine, and sharpen concepts to prog-

METHODS

This article adopts a rigorous and transparent approach to concept analysis, addressing criticisms that concept analyses can be arbitrary and lacking in necessary research rigor (Draper, 2014; Risjord, 2009). It has combined the model of evolutionary concept analysis (Rodgers, 1989, 2000) with the principles and standards found within a systematic review process as shown in **Figure 1**. This process therefore systematically, transparently, and comprehensively identifies, selects, analyses, and synthesizes the body of literature where conceptual expression of alcohol health literacy is found to identify the attributes, antecedents, consequences, references, surrogate, and similar concepts and contextual variations. The strategies outlined below are built into the process to minimize bias and to ensure a more robust analysis of the conceptual representation of alcohol health literacy in the literature.

Evolutionary concept analysis takes a relativist position and recognizes the developing nature of concepts, explicitly seeking to identify the influence of context on a concept and its relationship with overlapping concepts. It works to develop a cluster of attributes that are assessed in relation to their resemblance to a concept rather than because they strictly correspond to it. This emphasis is relevant to a study on alcohol health literacy, which is a relatively new and evolving concept, that has clear overlap with more established concepts, such as health literacy and media literacy, and that has, as its basis, the application of an existing concept (health literacy) within a particular context of alcohol. Alcohol health literacy also sits within a relativist discourse of health literacy, which increasingly recognizes the context-specific nature of the term (de Wit et al., 2017; Nutbeam, 2008; Pleasant et al., 2016; Rudd, 2015).

A systematic search was conducted in three major databases (PubMed, CINAHL, ERIC), Google Scholar, and across 10 pages of Google to find published peer-reviewed articles, grey literature, and policy documents pertaining to alcohol health literacy. The search strategy used the terms “alcohol literacy,” “alcohol health literacy,” and/or “health literacy” in keywords or the titles. Duplicate articles were then removed. Articles or documents were included to be screened if the term “alcohol literacy” or “alcohol health literacy” or “health literacy” or “literacy” within the context of alcohol appeared in the title or abstract.

A team of two researchers (O.O. and S.S.) screened the titles and abstracts for eligibility according to these inclusion/exclusion criteria. A total of 247 articles were found via the database searches and a further four articles were found via hand searching in Google’s Search Engine. Duplicates

($n = 79$) were removed and 111 articles were deemed to not be relevant as shown in **Figure 2**.

Articles were identified for full text review ($n = 61$). After reading by a team of four researchers, 19 were then excluded because they did not identify any elements of the concept and no data could be extracted. If multiple articles were found to be using the same conceptual definition [Expectancy Challenge Alcohol Literacy Curriculum (ECALC) ($n = 4$), Alcohol Literacy Challenge (ALC) ($n = 4$), Australian Alcohol Media Literacy (Austr. AL.) ($n = 4$)] or were written by the same authors using the same concept ($n = 4$), they were excluded. Where an author had authored different studies using different concepts, both articles were included (Austin & Johnson, 1997; Austin, Muldrow, & Austin, 2016; Banerjee, Greene, Hecht, Magsamen-Conrad, & Elek, 2013; Banerjee, Greene, Magsamen-Conrad, Elek, & Hecht, 2015).

A data extraction form was developed and piloted with a primary research article (Anderson & Rehm, 2016) and a document (DeBenedittis, 2011). The data to be extracted pertained to the elements of the concept of alcohol health literacy as described or understood by the authors and included (1) the attributes of the concept (i.e., key characteristics that define the concept) (2) antecedents (i.e., the factors that need to be in place for the concept to occur), (3) consequences (i.e., what happens as a result of the concept), (4) surrogate terms that could be used instead of the concept, (5) similar terms or other concepts that show similarity, and (6) contextual variants (i.e., observed variations in how the concept is applied in different contexts). Once extracted, the data were coded for analysis so that patterns in the data could be identified. This process was undertaken by two researchers.

Following the narrative synthesis, a theoretical mapping with two stages took places. The first stage described the application of health literacy to alcohol by mapping or coding the results of the review, identifying the characteristics or descriptors of alcohol health literacy against existing domains of health literacy (step 4 in **Figure 1**). All the research team coded the results independently. The second stage was the construction of an exemplar case that pulled the analysis together in a model of alcohol health literacy including all of the attributes discovered (Rodgers, 2000)

Mapping the Results: The Concept of Alcohol Health Literacy

The 26 articles included in this review have undergone an evolutionary concept analysis of alcohol health literacy, which is shown in **Table 2**. In this article, we have adopted the term “alcohol health literacy” but the review shows that the term “alcohol literacy” is often used as a surrogate

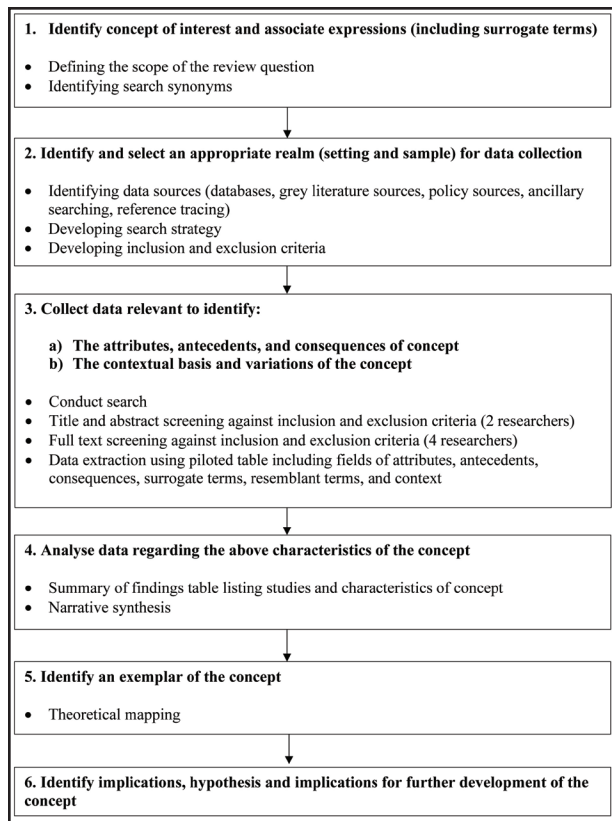


Figure 1. The combining of an evolutionary concept analysis with systematic review principles.

term (DeBenedittis, 2011; Fried & Dunn, 2012; Pati et al., 2018; Rundle-Thiele, Simieniako, Kubacki, & Deshpande, 2013) and similar terms adopted include “health literacy” (Anderson & Rehm, 2016; Barnard et al., 2014; Chisholm, Manganello, Kelleher, & Marshal, 2014) and “media literacy” (Chen, 2013; Dumbili & Henderson, 2017; Gordon, Howard, Jones, & Kervin, 2016; Radanielina Hita, Kareklas, & Pinkleton, 2018). The detailed concept analysis as shown in **Figure 3** revealed a concept with many different attributes; the implications of those practice interventions are illustrated in **Table 3**. For many authors (Anderson & Rehm, 2016; Barnard et al., 2014; Chisholm et al., 2014; Miller, 2018; Pati et al., 2018; Rundle-Thiele et al., 2013; Sinclair & Searle, 2016), alcohol health literacy is the degree to which individuals have the capacity to obtain, process, and understand knowledge about alcohol content, units, strengths, and harms.

Many of those who have studied alcohol health literacy have done so in the context of media literacy, and specifically in the broader framework of media education, where it is understood as applying critical thinking skills to alcohol marketing and media messages and developing the ability to identify alcohol messages, become aware of how those mes-

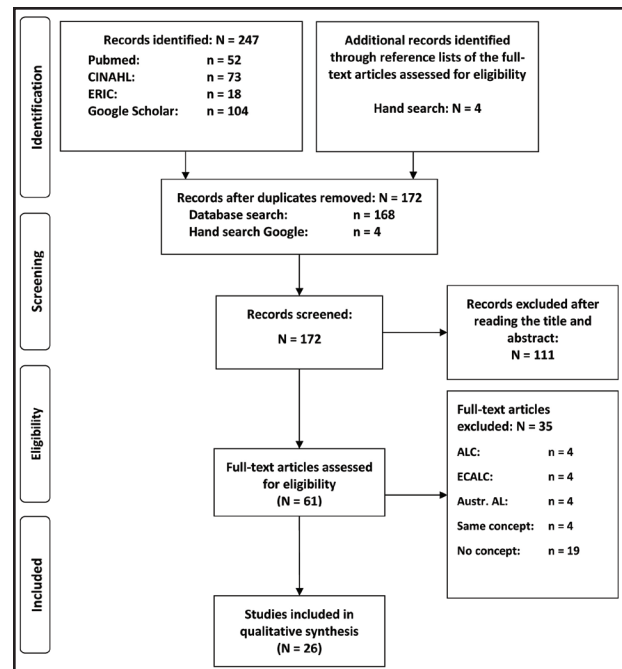


Figure 2. A PRISMA flow diagram of alcohol health literacy. ECALC = Expectancy Challenge Alcohol Literacy Curriculum; ALC = Alcohol Literacy Challenge; Austr. AL = Australian Alcohol Media Literacy. The diagram model is based on a template checklist from Moher et al., 2009.

sages may influence behavior, and deconstruct those messages with attention to the techniques used to attract attention (Austin et al., 2016; Banerjee et al., 2013; Berey, Loparco, Leeman, & Grube, 2017; Bohman et al., 2004; Chang et al., 2016; Chen, 2013; Dumbili & Henderson, 2017; Fried & Dunn, 2012; Gordon et al., 2016; Hall, Lindsay, & West, 2011; Kheokao, Kirkgulthorn, Yingrengreung, & Singhprapai, 2013; Radanielina Hita et al., 2018). Common to the Australian media literacy program (Gordon et al., 2016) and the U.S.-based program ALC (DeBenedittis, 2011) is the aim of demonstrating to young people how marketing is designed to produce positive beliefs about the benefits of drinking associated with sociability, independence, masculinity, and attractiveness. The Austr. AL. aims to enable children and young people to resist advertising (Gordon et al., 2016), whereas the ALC is an elementary, middle, and high school manual and curriculum designed to reduce young people’s attraction to alcohol and their expectancy of positive outcomes from drinking (DeBenedittis, 2011).

Other attributes identified as being central to alcohol health literacy include self-efficacy and an ability to manage drinking situations (Gordon et al., 2016; Ratzan, 2016), and using information to inform decision-making (Anderson & Rehm, 2016; Radanielina Hita et al., 2018; Ratzan, 2016;

TABLE 2
Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Anderson and Rehm (2016)	Knowledge of alcohol content; understanding of alcohol-related harms and risks; ability to access information relating to alcohol; ability to use information to make health decisions	Clear and accurate marketing and labelling; changed social norms; social marketing campaigns to educate the public and promote health literacy	Reduced alcohol consumption; reduced alcohol-related harm; improved health	Health literacy and health literacy applied to alcohol	Alcohol industry; global market; public policy; general population
Austin and Johnson (1997)	Critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use	Teaching of media literacy; advice from parents and teachers; accurate messages; cultural and gender-sensitive interventions	Reduced risky consumption; healthy alcohol behaviors	General media literacy; specific alcohol media literacy; specific alcohol abuse-oriented media literacy	Children; schools; education; study conducted in United States
Austin, Muldrow, & Austin (2016)	Critical recognition of advertising and marketing techniques, intentions, and impact	Teaching of media literacy; skills development	Reduced alcohol-related harm; reduced risky consumption; reduced underage consumption	Media literacy	Young adults (university students); psychology and personality traits; alcohol advertising; study conducted in U.S.
Banerjee, Greene, Hecht, Magsamen-Conrad, & Elek (2013)	Critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use	Teaching of media literacy; role modeling	Reduced risky consumption; reduced underage consumption	Media literacy; media-literacy-informed	Adolescents (age 14-17 years) and college students (age 18-25 years); evaluation of intervention; media education; study conducted in U.S.

Rundle-Thiele et al., 2013). The ECALC (Fried & Dunn, 2012) is a program that aims to change alcohol expectancy and challenge beliefs about the rewards of drinking. Also identified was a system competence including an aware-

ness of, and ability to navigate, health and education systems (Ratzan, 2016; Tamony, Holt, & Barnard, 2015).

Reflecting the emphasis on media literacy, the antecedents of alcohol health literacy are identified as teaching media lit-

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Banerjee, Greene, Magsamen-Conrad, Elek, & Hecht (2015)	Critical recognition of advertising and marketing techniques, intentions, and impact; ability to access information relating to alcohol; ability to use information to make health decisions	Teaching of media literacy	Reduced risky consumption; reduced underage consumption	Media literacy	High school students; schools; education; study conducted in U.S.
Barnard et al. (2014)	Knowledge of alcohol content; knowledge of the psychological and physiological effects of alcohol; understanding of alcohol-related harms and risks		Reduced alcohol-related harm; reduced risky consumption; improved health	Alcohol-specific health literacy; alcohol-related health literacy; alcohol health literacy; health literacy; alcohol knowledge; alcohol and carbohydrate knowledge; functional health literacy; carbohydrate content literacy	Young adults with type 1 diabetes (age 18-30 years); online survey; health care/diabetes centers; study conducted in United Kingdom
Berey, Loparco, Leeman, & Grube (2017)	Critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use; ability to access information relating to alcohol; ability to use information to make health decisions	Teaching of media literacy; accurate messages; control of distribution	Reduced alcohol consumption; reduced alcohol-related harm; reduced underage consumption	Media literacy applied to alcohol messages	Adolescents; literature review; psychology; different countries
Bohman et al. (2004)	Critical recognition of advertising and marketing techniques, intentions, and impact	Skills development	Reduced alcohol consumption; reduced underage consumption	Media literacy in context of alcohol prevention; media literacy	Children (3rd-5th graders); elementary schools; education; study conducted in U.S.

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Canadian Centre on Substance Use and Addiction (2017)	Knowledge of alcohol content; knowledge of the psychological and physiological effects of alcohol; understanding of alcohol-related harms and risks	Community social control; control of distribution; health education	Reduced alcohol-related harm; reduced risky consumption	Alcohol literacy; alcohol knowledge; alcohol awareness	College students; university; alcohol education; policy; study conducted in Canada
Chang et al. (2016)	Critical recognition of advertising and marketing techniques, intentions, and impact	Teaching of media literacy; cultural and gender sensitive interventions	Reduced alcohol consumption; reduced risky consumption; reduced underage consumption	Media literacy; media literacy in alcohol context; alcohol media literacy; alcohol drinking media literacy; media literacy capability	Adolescents (10th grade); schools; education; study conducted in Taiwan
Chen (2013)	Critical recognition of advertising and marketing techniques, intentions, and impact	Critical recognition of advertising and marketing techniques, intentions, and impact; cultural and gender-sensitive interventions	Reduced alcohol consumption; reduced alcohol-related harm	Media literacy; media literacy in context of alcohol; health promotion media literacy; media scepticism	Adolescents (7th to 10th graders); schools; intervention study; education; study conducted in U.S.; gender difference identified
Chisolm, Manganello, Kelleher, & Marshal (2014)	Accurate expectancies of the impact and effect of alcohol use; ability to access information relating to alcohol; ability to use information to make health decisions		Reduced alcohol consumption	Health literacy; health literacy applied to alcohol; literacy; functional health literacy	Adolescents (age 14-19 years); health care; education; study conducted in U.S.
Corrigan et al. (2018)	Knowledge of the psychological and physiological effects of alcohol; understanding of alcohol-related harms and risks	Clear and accurate marketing and labelling; health education; cultural and gender-sensitive interventions	Reduced alcohol-related harm; reduced risky consumption; improved health	Health literacy; fetal alcohol spectrum disorder health literacy; fetal alcohol spectrum disorder literacy; mental health literacy	Males/females (N = 341); mothers (of fetal alcohol spectrum disorder affected children); exploratory study; study conducted in U.S.

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
DeBenedittis (2011)	Knowledge of the psychological and physiological effects of alcohol; critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use	Teaching of media literacy; accurate messages	Reduced alcohol-related harm; reduced risky consumption	Alcohol literacy; media literacy; media literacy applied to alcohol	Elementary, middle, and high school; school setting; education; study conducted in U.S.
Dumbili and Henderson (2017)	Critical recognition of advertising and marketing techniques, intentions, and impact	Teaching of media literacy	Reduced risky consumption	Media literacy; media literacy in alcohol context; alcohol media literacy	Undergraduate students (N = 31); university; exploratory study; study conducted in Nigeria
Fried and Dunn (2012)	Understanding of scientific information and facts about pharmacological effects of alcohol; accurate alcohol expectancies; contrasting scientific facts with information communicated in alcohol media advertisements	Teaching of media literacy and facts	Reduced alcohol use; changed alcohol expectancy; reduced alcohol-related harm; reduced binge drinking; reformed alcohol drinking habits	Alcohol literacy; media literacy in alcohol context	University fraternity members (N = 250); intervention study using the Expectancy Challenge Alcohol Literacy Curriculum; study conducted in U.S.
Gordon, Howard, Jones, & Kervin (2016)	Critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use; self-efficacy and ability to manage drinking situations	Changed social norms; teaching of media literacy; community social control	Reduced alcohol consumption; reduced underage consumption	Alcohol media literacy; media literacy	Elementary school children (N = 165); school setting; education; study conducted in Australia

eracy (e.g., Austin & Johnson, 1997; Bannerjee et al., 2013; Berey et al., 2017; Chang et al., 2016; DeBenedittis, 2011; Hall et al., 2011). Reflecting also the situating of alcohol health

literacy as a property of the individual and especially important for young people, several studies identify the importance of parents and schools in providing advice (Kheokao et al.,

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Hall, Lindsay, & West (2011)	Critical recognition of advertising and marketing techniques, intentions, and impact	Teaching of media literacy; health education	Reduced risky consumption; reduced underage consumption	Media literacy; media literacy in alcohol context	School children (grades 9th to 12th (age 14-17 years); school; education, study conducted in U.S.
Kheokao Kirkgult-horn, Yingren-greung, & Singhprapai (2013)	Critical recognition of advertising and marketing techniques, intentions, and impact	Clear and accurate marketing and labeling; advice from parents and teachers; health education	Reduced alcohol consumption; reduced underage consumption	Media literacy; media literacy in alcohol context; literacy on alcohol use	School children (4th-12th) and adults (vocational students); exploratory study; education; study conducted in Thailand
Miller (2018)	Knowledge of the psychological and physiological effects of alcohol; understanding of alcohol-related harms and risks	Health education		Alcohol health literacy	Adults/professionals/workforce; commercial training; education; study conducted in U.S.
Pati et al. (2018)	Knowledge of alcohol content; knowledge of the psychological and physiological effects of alcohol	Changed social norms; advice from parents and teachers; role modelling; community social control; health education; cultural and gender sensitive interventions	Reduced underage consumption; reduced alcohol-related harm; reduced alcohol consumption	Alcohol literacy; literacy	Adults; exploratory study; study conducted in India

2013; Radanielina Hita et al., 2018; Tamony et al., 2015), accurate messages, and role modelling appropriate drinking behavior (Austin & Johnson, 1997; Banerjee et al., 2015; Berey et al., 2017). Drinking is a social behavior and studies identify the importance of changing social norms (Pati et al., 2018; Radanielina Hita et al., 2018; Ratzan, 2016; Rundle-Thiele et al., 2013), community social control (Gordon et al., 2016; Pati et al., 2018), and developing skills required to manage social situations where there is alcohol involved (Austin et al., 2016; Bohman et al., 2004; Ratzan, 2016). Also identified is how marketing and label-

ling of alcohol content and guidelines can contribute to alcohol health literacy (Anderson & Rehm, 2016; Corrigan et al., 2018; Kheokao et al., 2013) as well as control of distribution (Berey et al., 2017; Pati et al., 2018; Radanielina Hita et al., 2018; Ratzan, 2016).

The consequences of alcohol health literacy are conceptualized as reducing alcohol-related harms (e.g., Anderson & Rehm, 2016; Corrigan et al., 2018; DeBenedittis, 2011) and reducing levels of consumption (Gordon et al., 2016; Kheokao et al., 2013; Pati et al., 2018), particularly risky and underage consumption (Austin et al., 2016;

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Radanielina Hita, Kareklas, & Pinkleton (2018)	Critical recognition of advertising and marketing techniques, intentions, and impact; accurate expectancies of the impact and effect of alcohol use; ability to use information to make health decisions	Teaching of media literacy; advice from parents and teachers; control of distribution; changed social norms	Reduced alcohol-related harm; reduced risky consumption	Media literacy; media literacy in alcohol context	Undergraduate university students (age 18-21 years); exploratory study; study conducted in Canada
Ratzan (2016)	Knowledge of the psychological and physiological effects of alcohol; accurate expectancies of the impact and effect of alcohol use; ability to access information relating to alcohol; ability to use information to make health decisions; self-efficacy and ability to manage drinking situations; system competence: awareness of and ability to navigate, health and education systems	Social norms; individual behaviour; clear and accurate marketing and labelling; changed social norms; accurate messages; skills development; control of distribution; health education	Reduced harmful use of alcohol (including binge drinking, underage drinking, and drunk driving); reduced alcohol consumption; reduced alcohol-related harm; reduced risky consumption	Alcohol health literacy; health literacy; health literacy on the system level; health literacy in alcohol context	General public, policy, and practice around the world; education; study conducted in U.S.
Rundle-Thiele, Simieniako, Kubacki, & Deshpande (2013)	Ability to access information relating to alcohol; ability to use information to make health decisions	Clear and accurate marketing and labelling; health education; control of distribution; changed social norms; teaching of media literacy	Reduced alcohol consumption; reduced alcohol-related harm	Alcohol literacy; health literacy (various dimension, individual, system); alcohol knowledge; literacy	Adults, exploratory study, respondents in Australia, Canada, and Poland; alcohol literacy questionnaire

Bannerjee et al., 2013; Fried & Dunn, 2012; Ratzan, 2016) through positive individual behaviors. Such consequences are associated with alcohol health literacy within almost all concepts identified as shown in **Table 2**.

The literature shows that the concept of alcohol health literacy is currently being discussed predominantly with reference to children and young people and primarily within educational settings (e.g., Austin et al., 2016;

TABLE 2 (continued)

Alcohol Health Literacy Review Studies

Reference	Attributes (Characteristic, Definition)	Antecedents (What Needs to Be in Place to Enhance Alcohol Health Literacy?)	Consequences (Outcomes of Being Alcohol Health Literate)	Surrogate Terms	Context Notes
Sinclair and Searle (2016)	Knowledge of alcohol content; knowledge of the psychological and physiological effects of alcohol	Clear and accurate marketing and labelling; control of distribution; training of health care professionals in diagnosis and management of alcohol-related harm	Reduced alcohol-related harm; improved health	Alcohol knowledge; basic health literacy; health literacy applied to alcohol health literacy	Adults (health professional); exploratory study; study conducted in U.K.
Tamony, Holt, & Barnard (2015)	Knowledge of alcohol content; knowledge of the psychological and physiological effects of alcohol; ability to access information relating to alcohol; ability to use information to make health decisions; system competence: awareness of and ability to navigate health and education systems	Clear and accurate marketing and labelling; health education; advice from parents and teachers	Reduced alcohol-related harm; reduced underage consumption; improved health	Alcohol health literacy	Diabetes context; review study; study conducted in U.K.

Bohman et al., 2004; Chang et al., 2016; DeBenedittis, 2011; Gordon et al., 2016). Those studies that discussed alcohol health literacy among the general or adult populations were less likely to reference media literacy as a component or media education as an intervention to increase alcohol health literacy (Corrigan et al., 2018; Miller, 2018; Rundle-Thiele et al., 2013). There is some variation in how the concept is discussed when it is used with particular population groups, such as young people with type 1 diabetes, where the concept of alcohol health literacy is defined as the ability to understand the carbohydrate content of alcoholic drinks (Barnard et al., 2014). A recent study by Corrigan et al. (2018) refers to alcohol health literacy specifically in relation to fetal alcohol spectrum disorders (FASD) and the ability of individuals to understand the impact of FASD.

A key step in a concept analysis is the construction of an exemplar case that is a practical demonstration of the concept that is universal enough to clearly show the application of the concept (Rodgers, 2000). **Table 3** shows the results of the theoretical mapping in which the many domains of health literacy previously outlined in **Table 1** were applied to alcohol. It is a “real-world” extraction of the concept of alcohol health literacy and offers a template for those designing alcohol education or alcohol health promotion.

DISCUSSION

This concept analysis of alcohol health literacy reveals the fragmentation of the concept of health literacy when applied to a range of topics. The findings also indicate that when the health literacy concept is applied to alcohol, in addition to the skills of health literacy identified by Nutbeam (2000), newly

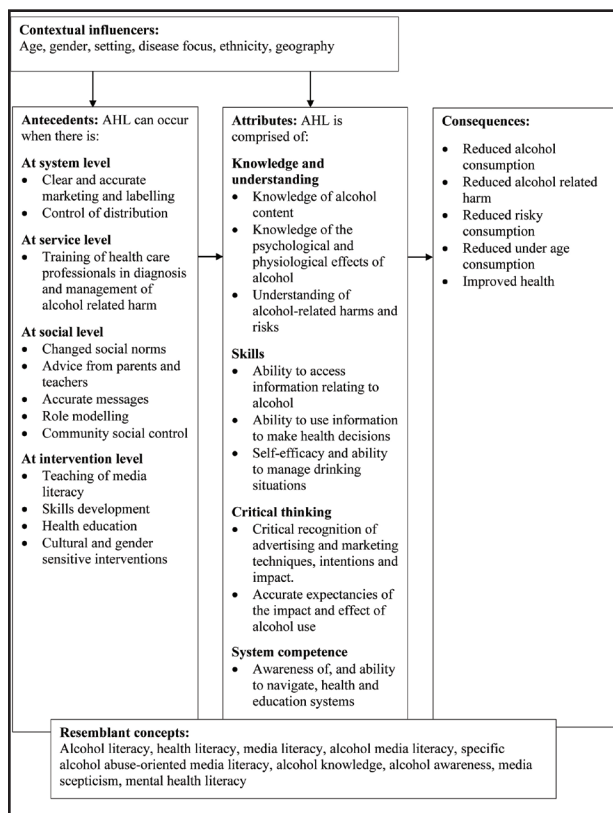


Figure 3. The concept of alcohol health literacy (AHL) as shown within its framework with the identified contextual influencers, antecedents, attributes, consequences, and resemblant concepts.

introduced domains to the health literacy discourse, such as distributed health literacy (Edwards et al., 2015), and public health literacy (Freedman et al., 2009) should be considered when developing alcohol health literacy interventions.

The concept analysis reveals the importance of taking a relativist approach to using health literacy as a concept. The context in which the concept is used is critical, thus we see health literacy is context specific. Therefore, health literacy may be used differently when applied to alcohol use in comparison to when health literacy, for example, is applied to diabetes (Schillinger et al., 2002) or mental health (Jorm, 2015; Kutcher, Wei, & Coniglio, 2016). In common with other domains of health literacy and reflecting a dominant individualist paradigm, alcohol health literacy currently emphasizes the importance of understanding alcohol risks and harm and individuals drinking more safely. However, the concept analysis approach also facilitates the identification of other important domains that are currently not being explored in health literacy. **Figure 4** illustrates these different “pulls” between the nature of the knowledge in health literacy, whether objective (scientific) or subjective (socially constructed), and the determinants of health literacy, whether individual

TABLE 3
The Exemplar Case of Alcohol Health Literacy

Literacy Domains	Example
Functional health literacy	Gain information about alcohol and carbohydrate content of drinks Knowledge of impact of alcohol on health Be able to estimate personal consumption Knowledge of alcohol strengths
Interactive health literacy	HCPs, teachers, and public-facing staff able to raise the issue of drinking and assess readiness to change Drinking behavior and alcohol history as part of HCP assessments People being able to talk about alcohol use and navigate services
Distributed health literacy	Accurate alcohol messages relayed by social networks Accurate social media portrayals of drinking behavior People able to draw on information and skills held across the group to make decisions appropriate for the social situation
Critical health literacy	Understand how drinking is influenced by marketing and subliminal messages Be able to understand and take action to address the social determinants of drinking
Public health literacy	Communities to control distribution Pricing, labeling, and marketing controlled to develop alcohol health literacy in populations

Note. HCP = health care professionals.

or structural. These “pulls” give rise to different domains of health literacy that are shown in the quadrants of **Figure 4**. Thus, alcohol knowledge can be objective (such as knowing the amount of alcohol in a standard drink and recommended daily/weekly intake to minimize risk), which in turn can be termed functional or scientific alcohol health literacy.

It may also be subjective and the meanings that people construct around alcohol use, such as expecting to feel more confident, as either individuals or within social groups or networks (which can be termed distributed alcohol health literacy). Health literacy can also be termed interactive alcohol health literacy when people seek to navigate social, health, or

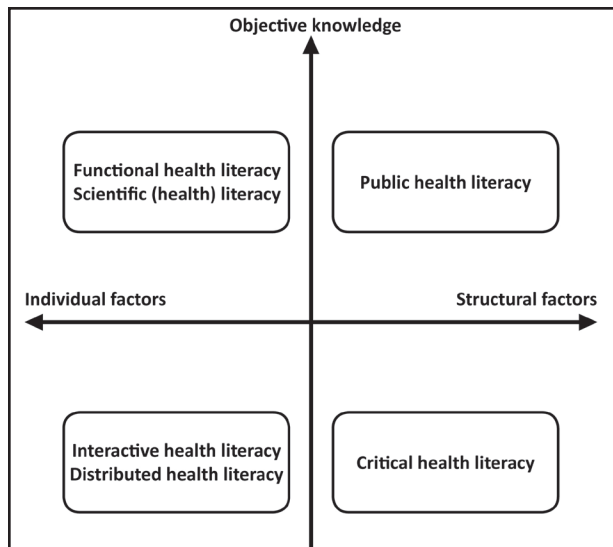


Figure 4. The domains of alcohol health literacy.

education systems. Alcohol health literacy can be individually held or socially determined by person-level factors, such as income or education, or by structural factors relating to licensing or availability, which can be termed public health literacy applied to the context of alcohol. Critical health literacy applied to alcohol is when people or communities identify and act upon those determinants that they identify as priorities based on their experiences.

When applied to alcohol, the concept of health literacy has many attributes relating to critical thinking and the reading of alcohol messages. Many studies have sought to evaluate the effectiveness of media literacy programs with young people and whether understanding the persuasive intent of alcohol advertising can prompt improved decision-making and behavior change. However, being alcohol health literate is a socially situated act that embraces empowerment and social and political action. Alcohol health literacy demands an understanding of the ways in which alcohol is promoted in society and the skills to take action at both the individual and the community level, which Freedman et al. (2009) describe as public health literacy and Zarcadoolas, Pleasant, and Greer (2005) call civic literacy. Surprisingly, only one study that we identified looks at the industry (Anderson & Rehm, 2016) and its role in providing accurate labelling, and another study highlights the importance of alcohol-related policymaking and providing sustainable policy programs regulating alcohol manufacturing (Pati et al., 2018). An awareness of the complex forces that promote alcohol in society and how alcohol-related harms are socially distributed would also be part of public health literacy (Freedman et al., 2009). Numerous policy documents show that alcohol-related harms are socially

patterned with those of lower socio-economic status and educational levels being more likely to experience physical, mental, and social harm from alcohol. Yet, this review article found no adoption of a determinants-based approach. Roche et al. (2015) call for a more nuanced approach to reducing alcohol-related harms by a better understanding of the complex and different ways that alcohol affects different communities and the social practice of alcohol health literacy.

An increasing focus of health literacy research has been on interactive health literacy (see Table 1), which is the interaction between an individual and systems or other individuals that may contribute to low health literacy. Several studies have identified the lack of awareness and skills of practitioners in relation to working with people with low health literacy (Coleman, Hudson, & Maine, 2013) and also in diagnosing and assessing alcohol use (Beich, Thorsen, & Rollnick, 2003; Kaner et al., 2001; Royal College of Psychiatrists, 2011). This review includes only two studies (Ratzan, 2016; Tamony et al., 2015) that draw attention to the skills needed to raise concerns about drinking behavior with health and education professionals; one study highlights the need to develop the competencies of health care and education professionals (Sinclair & Searle, 2016), and the other describes one in-house training program that addresses the skills and knowledge of professionals who work with people who have alcohol issues (Miller, 2018). In their study, Barnard et al. (2014) specifically point to the importance of teaching alcohol health literacy to professionals to equip them with a skill set that enables them to better interact with patients in context of their alcohol related-health problems. In health literacy research and practice, many have highlighted the importance of considering the health literacy of professionals in health care and community settings (Baker, 2006; Bruland et al., 2017; Kutcher et al., 2016; Parker & Ratzan, 2010; Peterson, Cooper, & Laird, 2001) and that organizations and settings should be “health literate,” (Brach, 2017; Brach et al., 2012; Trezona, Dodson, & Osborne, 2017) better enabling service users to interact with education, health, and social systems leading to better education, therapy, and health outcomes.

Drinking mostly takes place in a social context and relational aspects of health literacy are important when drinking and amounts of alcohol are negotiated and navigated in everyday life, including on social media (McCreanor et al., 2013). This broader concept of distributed health literacy (Edwards et al., 2015) and how health literacy is a shared resource that draws from individuals and across the community (Sentell, Pitt, & Buchthal, 2017; Sentell, Zhang, Davis, Baker, & Braun, 2014) was not evident in this review article on alcohol health literacy. Addressing distributed alcohol health literacy and

the roles performed by health mediators in communities, whether family, peers, media, or the Internet, social media is key to understanding and promoting alcohol health literacy.

The strength of applying the concept analysis method within a defined topic (in this case alcohol) is enabling a new look at the wider concept of health literacy and revealing the dominant domains. In the case described here, we identified domains of functional and scientific health literacy in building knowledge and skills around understanding risks and critical cognitive skills around reading media messages. Individuals need not only the skills and competencies to access, understand, appraise, and apply alcohol information but also a supportive environment that facilitates the acquisition of those skills and the building of interactive health literacy. Far less evident were public health literacy and distributed health literacy domains. Building distributed health literacy in relation to alcohol means the delivery of programs in different settings, including families, education settings, and workplaces, and across the life course that develop interpersonal skills that enable individuals to draw on the information and skills in their social networks. Building public health literacy would involve public and policy discourses about the risks and benefits of system-wide approaches to alcohol (e.g., balancing tax revenues with the health and social costs of alcohol).

STUDY LIMITATIONS

Although this analysis has been conducted systematically according to systematic review principles of comprehensiveness, transparency, and replicability (Higgins & Green, 2011) and is able to help delineate conceptual boundaries and the operationalization of alcohol health literacy, it has not included an appraisal of the literature selected and does not comment on the maturity of the concept as described. There may be other studies that focused on developing alcohol health literacy that are not included in this review article because our choice of similar terms was limited based on our interest in the application of the concept of health literacy. Therefore, this is not a comprehensive review of the alcohol health promotion field.

CONCLUSION

Exploring the concept of alcohol health literacy through a rigorous and transparent methodology has shown that when the health literacy concept is applied to issues like alcohol, it is done so in a narrow sense when broader domains, such as distributed or public health literacy, are omitted. The exemplar case developed from this rigorous evolutionary concept analysis provided in **Table 3** shows the potential for a broad

and integrated approach to alcohol health promotion. Although the reduction of alcohol use is a public health priority and the 2015 German Prevention Law (Deutscher, 2015) specifically refers to health literacy skills, this is only in a narrow sense of avoidance of risk. When applied to alcohol, health literacy needs a definition that draws attention to health literacy being created and distributed within social groups and systems, whether organizational, educational, or health care. The health literacy of the public and civic society also needs to be developed. Therefore, we propose a broader definition with the additions highlighted:

Health literacy is the motivation, knowledge and competencies of individuals, social groups, and the public, within systems and social settings to access, understand, appraise and apply health information in order to make judgments and take action in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life throughout the course of life.

Where health literacy is applied to a context (e.g., in relation to a disease or a population group), the concept analysis shown in **Figure 3** provides an important framework for developing interventions. It focuses on what needs to be in place to develop health literacy at different levels (the antecedents), what does an individual need to possess to be health literate in that context (the attributes), and what would be the outcomes of being health literate (the consequences). The analysis also reveals the importance of building both individual skills and addressing the structural conditions that give rise to health behaviors at the same time.

The innovative methodology adopted here of blending concept analysis with systematic review principles has enabled a theoretical mapping that clearly shows the importance of clarifying the contextual application of the concept of health literacy to different topics or population groups. In so doing, it may prompt a broader health literacy approach leading to more effective alcohol health promotion interventions.

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