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Original Article

Explanatory Model of Alcohol Consumption in Health Care Personnel.

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Abstract: This article presents a proposal for the conceptual-theoretical-empirical substructuring strategy, resulting in the construction of an explanatory model that shows factors related to alcohol consumption among healthcare personnel, based on the Socio-Ecological Model of McLeroy et al. (1988) and empirical evidence. This model is useful in the nursing profession to gain insight into the healthcare personnel population and, in the future, continue research by implementing alcohol consumption prevention actions.

Keywords: Explanatory model, Alcohol consumption, Health personnel.

1. Introduction

Alcohol consumption represents a major public health problem, both due to causing human losses and deteriorating quality of life[1]. Regarding the first effect mentioned, the World Health Organization (WHO) identifies this substance as the second behavioral risk factor for death in men and the fifth in women. This organization also highlights how alcohol causes organ damage, provokes aggressive behaviors, and even contributes to triggering mental disorders[2].

Addressing the issue of alcohol consumption among healthcare personnel is of great importance due to the pressure nurses and doctors endure. Reasons include their exposure to contagious diseases, especially during the COVID-19 pandemic, or workload overload in a job that involves constant attention and care. This often leads to physical and mental exhaustion[3], as well as mental health disorders such as anxiety, depressive symptoms, or burnout syndrome[4]. Consequently, the consumption of substances, notably alcohol, is common as a way to cope with the issues arising from their work routines[5].

Various countries have reported alcohol consumption among healthcare personnel: in the United States, 80% of nurses reported

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consumption, of which 67.3% were at low risk[6]; in France, 35.7% of doctors reported dangerous consumption, with 15% engaging in this behavior daily[7]; in Mexico, consumption has been identified to range between 41.2% and 79.8%, with higher consumption among healthcare personnel aged 18 to 33 years[4,8].

Several studies have focused on isolated factors that may influence alcohol consumption among healthcare personnel[9-12]. However, there is a scarcity of multifactorial research offering an explanation for alcohol consumption in healthcare personnel[13]. Regarding multifactorial explanations, it has been found that mental disorders impact the sociopolitical and family spheres of healthcare personnel, leading to decreased productivity, achievement of personal and family goals, and adequate performance of social, educational, and work roles.

In this context, social ecology studies the effect of the relationship between its dimensions of analysis on behavior and health; thus, the health behavior of nursing and medical personnel is influenced by the sum of individual, interrelational, organizational, political, and cultural aspects[14]. However, some models focus only on the individual and the process of change, without considering the interpersonal, social environment, and cultural factors that influence behavior[15].

The literature review identifies scarce evidence on the models used in studying the socio-ecological factors that can provide a comprehensive explanation for alcohol consumption in this population sector[16]. To date, available references on ecological models have focused on adolescents and university students with substance use problems[17-19].

Since no model or theory has been identified related to alcohol consumption among healthcare personnel and their various social interactions, it is necessary to use theoretical models that allow understanding and explaining this issue through a new interpretation of the concepts of the reference theoretical model. Therefore, the implementation of the conceptual-theoretical-empirical (C-T-E) structure is useful in the present study, as it analyzes the components of a structure and the content of a theory, with the aim of showing what a conceptual model indicates based on the identification of concepts, their classification, the identification of propositions, their hierarchical ordering, and the construction of the resulting diagram[20].

Consequently, the objective of the study is to present a proposal for constructing a socio-ecological model that explains alcohol consumption among healthcare personnel through the implementation of the conceptual-theoretical-empirical (C-T-E) substructuring method.

2. Method

To develop the Explanatory Model, the C-T-E Structure method was used. This method aims to identify the concepts and propositions that constitute the model, thus obtaining a structure that clearly, concisely, and representatively reflects these components. Achieving this requires reflective and analytical thinking as well as careful planning[20].

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To obtain the C-T-E Structure, five steps were employed: 1) identification of concepts, 2) classification of concepts within the explanatory model, 3) identification and classification of propositions, 4) hierarchical arrangement of propositions, and 5) construction of the diagram.

2.1 Analysis of McLeroy and Colleagues Socio-Ecological Model

The Socio-Ecological Model (SEM) has been widely used in health promotion, considering behavior as the object of study and determined by levels of social influence. The SEM takes into account individual, social, and environmental factors to impact health promotion. This model posits that behavior affects and is influenced by social levels, which include the individual and characteristics such as knowledge, skills, self-concept, and self-confidence (intrapersonal level); social relationships, including family and friendship ties and connections (interpersonal level); organizational influences and workplace factors (organizational level); community aspects (community level); and legislation, policies, and taxes (public policy level)[15]. Additionally, Simons-Morton and colleagues propose adding norms, beliefs, or values held by the individual regarding a certain phenomenon (cultural level)[14].

3. Results and discussion

3.1 Concepts of the Explanatory Model of Alcohol Consumption in Health Personnel (MECAPS)

The central concepts of the SEM considered for this work are: level 1) intrapersonal, 2) interpersonal, 3) organizational, 4) public policy, and 5) culture. For the present study, the community level will be excluded as it does not aim to address health personnel outside the hospital institution; hence, aspects related to the neighborhood will not be investigated[15].

Regarding the first level, aspects related to cognitions that affect a person's behavior are addressed, which are generated as a result of work overload, long working periods without rest, and the excess of patients attended to[14].

The second level addresses aspects that influence interpersonal relationships, focusing on behavioral influences, including influences from family and friends, who provide important mediating components in life and general well-being[14].

At the third level, organizational aspects are related to consumption due to the characteristics of the organization where the health personnel work; these organizations can influence health behavior, for example, by providing direct services against alcohol consumption[14].

At the fourth level, aspects related to public policy also influence alcohol consumption through legislation, taxes, and regulatory agencies, as well as the subjective appreciation of local, state, and federal policies[14].

Finally, at the fifth level, cultural aspects can affect habits and practices that increase or decrease health risks. Here, attitudes toward consumption can be accepted and measured in terms of attitudes, beliefs, and perceptions toward alcohol consumption[15].

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3.2 Classification of Concepts of MECAPS

The concepts presented are classified using Kaplan's observability continuum, which represents a phenomenon as a directly observable empirical referent[21]. At the intrapersonal level, individual characteristics of a person are included. These include age, gender, education, anxiety, depressive symptoms, and burnout syndrome. The literature indicates that certain factors are attributable to alcohol consumption, notably age, as it has been identified that health personnel who begin alcohol consumption at a younger age are more likely to exhibit abuse or dependence on this substance in adulthood[22].

Gender is another attributable factor, with males consuming greater amounts of alcohol. However, female consumption has been considered an alternative to counter traditional masculine codes by incorporating more masculine practices[23]. Regarding the education level of health personnel, fewer years of academic training influence their perception of the health consequences of alcohol consumption[24].

Another variable of interest is anxiety, as health personnel with this condition may develop substance use disorders such as alcohol in an attempt to self-regulate symptoms, with a higher prevalence observed among female nursing staff[3,25]. Additionally, early alcohol consumption during adolescence can foster the development of depressive symptoms in adulthood[26]. Burnout syndrome is another influential factor, affecting job satisfaction, health, and well-being. Health personnel are reported to be three times more likely to develop burnout when there is alcohol consumption on four or more occasions per week[27].

At the interpersonal level, the influences of the individual's environment through social support are included. Having social support such as family or friends generates a beneficial influence to cope with stress-inducing situations[28]. Having a support network or company that can provide assistance or counseling when needed can be vital for overall health, as it encourages rejection of alcohol consumption[29]. However, health personnel who perceive alcohol consumption by peers are more likely to adopt this behavior, regardless of the amount and frequency of consumption[30].

At the organizational level, the organizational health climate is included through the subjective and socially shared perceptions that workers have about the characteristics of the organization and the work environment. A favorable organizational climate for health personnel provides achievements, productivity, unity, and peer support, motivation, among other factors. Conversely, a negative climate manifests through maladaptation, high staff turnover, absenteeism, and low productivity, which are associated with alcohol consumption, leading to poor performance, unexcused absences, and workplace accidents, resulting in greater work-related problems compared to those who do not consume these substances[31,32].

At the public policy level, the perception of public policies by health personnel is included. Policies are designed to strengthen associations that contribute to creating environments that favor the generation or expansion of health responses

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against alcohol consumption by generating a protective effect against alcohol consumption and related harms[15]. Measures such as restricting availability, marketing, and increasing prices are favorable for reducing consumption[33].

Finally, at the cultural level, attitudes toward consumption are included, represented by actions taken to address health problems through cultural attitudes and norms regarding alcohol intake. For example, during adolescence, parental norms are overridden by the influence of peers' more permissive norms toward alcohol consumption, leading to risky consumption practices in adulthood[34].

3.3 *Identification of Propositions of* MECAPS

The SEM does not contain theoretical assumptions; however, a central proposition can be identified through its content, which states that the behavior or conduct of health personnel is established based on the five social levels: intrapersonal, interpersonal, organizational, public policy, and culture.

Based on the above, a central proposition in the present investigation indicates that alcohol consumption behavior in health personnel has multiple influences across the five social levels[15].

3.4 *Hierarchical Arrangement of Propositions of* MECAPS

This model proposes relationships between the concepts included in the five social levels, which influence the outcome behavior (alcohol consumption):

Age, gender, education, anxiety, depressive symptoms, and burnout syndrome influence alcohol consumption in health personnel.
Social support affects alcohol consumption in health personnel.
The organizational health climate predicts alcohol consumption in health personnel.
The perception of public policies affects alcohol consumption in health personnel.
Attitudes toward consumption predict alcohol consumption in health personnel.
The relationship between intrapersonal, interpersonal, organizational, public policy, and cultural social levels influences alcohol consumption.

The six propositions mentioned above indicate a link between two or more concepts, so they can be categorized as relational proposals[20].

3.5 *Construction of MECAPS Diagram*

Figure 1 shows the relationship of the four social levels (intrapersonal, interpersonal, organizational, public policy) from McLeroy et al.'s (1988) SEM and the social level (cultural level) added by Simons-Morton et al. (2012), which were used to guide the structural composition. Therefore, the integrated concepts in the SEM are proposed, grouped into five levels, as well as the evaluation instruments that will be used to measure each of the concepts of the Explanatory Model of Alcohol Consumption in Health Personnel.

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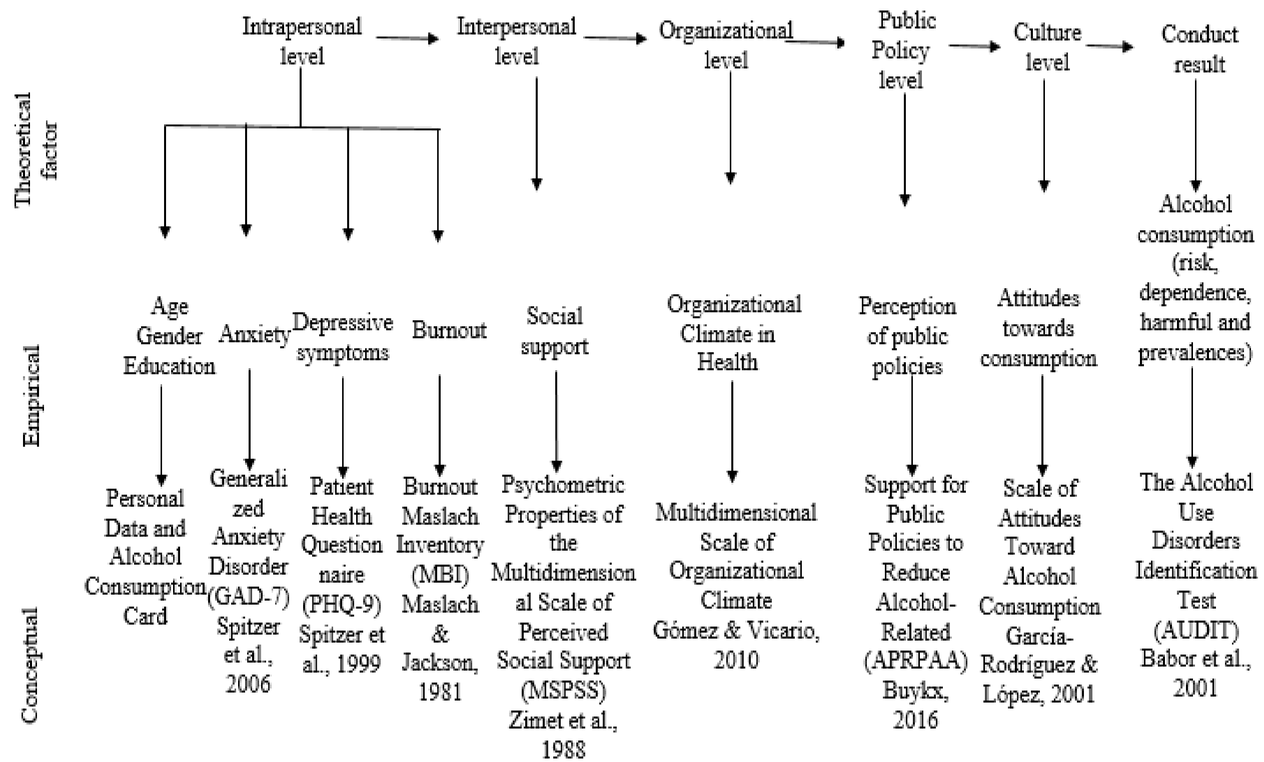

Figure 1. Theoretical substructure of MECAPS.

4. Conclusions

In disciplinary nursing research, McLeroy and colleagues' Socio-Ecological Model has been used in the Mexican context to direct research studies among high school adolescents16 and university students[32] related to drug use. However, there is no empirically proven evidence identified in health personnel associated with alcohol consumption, nor the implementation of the social level of culture to address the issue holistically.

Therefore, the present proposal of a substructured model represents an alternative to explain the relationship of factors that can influence alcohol consumption through different social levels. In this regard, MECAPS was developed through the technique of theoretical substructuring based on McLeroy and colleagues' SEM, with the cultural level proposed by Simons-Morton and colleagues. MECAPS addresses five social levels of intrapersonal,

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interpersonal, organizational, public policy, and culture, which can positively or negatively influence alcohol consumption in health personnel.

The development of the Explanatory Model enriches the nursing discipline and provides knowledge for understanding alcohol consumption, which can be used as a foundation to implement promotion and prevention actions regarding alcohol consumption among health personnel.

5. Declarations

5.1 *Author Contributions*

Conceptualization: EOVP; Methodology: KSLG; Validation: JLVM; Formal Analysis: FRGF., APCM; Investigation: EOVP; Resources: EOVP; Data Curation: FRGF., APCM; Writing – Original Draft: EOVP; Writing – Review & Editing: KSLG., JLVM; Visualization: JLVM., APCM; Supervision: EOVP., KSLG; Project Administration: EOVP.

5.2 *Conflict of Interest*

The authors declare that there is no conflict of interest regarding the development of this study.

5.3 *Funding*

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