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Critical Realism: An Emerging Approach in Nursing

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Abstract

Background: Critical realism has remarkable consequences in healthcare organizations and especially in nursing. We aimed to explain the role and effects of the philosophical school of critical realism in the nursing profession.

Materials and Methods: In this review, online databases, including PubMed, Scopus, Web of Science, and CINAHL were searched with no language limitation up to March 2021. The keywords "Realism, Critical realism, Nursing, Education, Knowledge, Care, Research, and Clinical" were searched separately and also using combined operators (AND, OR, NOT).

Results: Nursing teachers should provide a rich learning environment based on critical realism, use their selected content in the curriculum, and pay attention to individual and social factors affecting learning. In the field of nursing research, managers and policy makers can use critical realism to evaluate the available evidence on an issue or topic and achieve a more comprehensive explanation of the results and the effectiveness of interventions and programs. Also, in the clinical field, critical realism emphasizes the involvement of various individual, social, and structural factors in the behavior of nurses and patients and advises nurses to pay attention to the role of these factors in assessing the condition of their clients and notes the effectiveness of nursing interventions. Also, the application of philosophical perspectives in nursing can reduce the gap between theory and clinical knowledge.

Conclusion: The realistic approach that emerges from critical realism fits the complexities of health care organizations and helps understand the nature of nursing work and decision making better. However, it seems that not enough attention has been paid to the philosophical roots of this framework in nursing and the result is insufficient application in nursing.

Key Words: Critical Realism, Emerging Approach, Nursing.

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1- INTRODUCTION

Nursing is a distinctive professional and scientific major with specific knowledge which is obtained by investigation and clinical practices. Evidence gathered from different research paradigms, theories, and philosophies of nursing is more appropriate to address the fundamental question of the theoretical and clinical gap in nursing. In addition, health care practices today are multifaceted, and the professional practice of nursing involves the development of knowledge to support these complexities (1). According to Perron (2015), nurses need to have knowledge of the wider world and understand how people (as patients) fit into it according to their different philosophical ideas. This reveals that nursing as a discipline should consider how philosophy can contribute to the development of the profession (2).

Critical realism is one of the philosophical approaches that challenges such complexities and enables nursing researchers to work together in different disciplines and methods (1). Critical realism is a new philosophical perspective that provides a fundamental alternative to the positivist and interpretive paradigms (3). Critical realism is a comprehensive meta-theory first developed in the 1970s by a philosopher named Roy Bahaskar, which has since represented a distinct school of thought about the nature and cognition of the world and social phenomena (4). Proponents of critical realism take advantage of the strengths of positivism and constructivism, but at the same time, they reject the limitations of each paradigm (5). Critical realism is similar to positivism based on believing in a reality beyond human knowledge; however, by explicitly combining constructivist approaches in his view of truth and knowledge production, it goes beyond post-positivism and positivism (6). In constructivism, the meaning of an object is given to it through interaction with it (7). An important point about critical realism in the previous proposition is that objects exist regardless of our knowledge about them; they create a special meaning for people through interaction with it. Also, meaning is socially constructed through the spread of knowledge, and therefore occurs historically, politically, and culturally. In this case, knowledge is considered contextual and evolving (8). Critical realists have a realist ontology, meaning that they express a real-world independent of our perceptions, theories, and structures while accepting a kind of epistemological constructivism and relativism. In other words, they accept that our understanding of this world is inevitably a construct of our own perspective and worldview (9).

On the other hand, they believe that all the processes that take place in the social world take place within an open system (10, 11), and in an open system, the outcome depends on the effects of various and somewhat unpredictable factors (12). The first feature of this philosophical view is the generation mechanism. Critical realists find the network of causality complex and state that what is observed reflects the production mechanisms-structures, powers, and subsurface relations- that come together in a particular composition or context to create an event (13). For example, given the complexity of the causal network in moral distress, the ability to better understand the mechanisms of production is a significant methodological strength for research related to moral distress. For example, one study found that although some factors contribute to moral distress, such as health care providers' awareness of their moral commitment, they were unable to exercise their own ethical rules due to structural constraints (14, 15). The second characteristic of critical realism is the belief in a class ontology. Reality is seen

in three different (class) dimensions (7): empirically, what we experience, actually, or objectively, because some events are not experiential, there is another level that, in addition to experiences, includes unseen events and reality, which is the deepest layer and place that contains mechanisms and causes (8, 16). In the example of moral distress, the nurses' experience of moral distress needs to be searched to understand the conditions and contexts that combine to influence the underlying mechanism and lead to the phenomenon of moral distress in health care providers. We may obtain information (13) or, for example, at the experimental level, a person may experience a heart attack or we may observe a person who has had a heart attack. On an actual or objective level, some heart attacks may go unnoticed, for example, a silent heart attack, or a person may fall, die, and be buried without recognizing a heart attack. However, none of this information explains why heart attacks occur. To do this, it is necessary to identify the underlying mechanisms such as diet, stress, economic conditions, behavior, biology, and so on.

So the mechanism is something that has the ability to produce an observable event and can be a natural biological mechanism (e.g., thrombosis) or a social mechanism (e.g., inequality in health) that can trigger a stress response and contribute to the formation of heart attack. In short, there are several mechanisms that need to be identified in order to understand the underlying heart disease. Positivism tends to remain in the empirical realm, while critical realism, in reality, is defined as a potential rather than a real event. For example, the human body has the ability to produce blood clots, but the mechanism that activates blood clots only occurs if the body is damaged and needs a blood clot to repair it. The mechanism is more than active. Clot formation during a heart attack is a special event: elimination of atheroma in a coronary artery, but its activation has multiple triggering mechanisms that occur both immediately and in a long time. Thus, the mechanism is the place where reality is located and is the subject of scientific research (6). The third feature is the dialectical interaction between social structures and human authority, which focuses on the interdependence of structure and authority (8, 16). From a critical realist point of view, social structures have the ability to restrain individuals and enable them to function through the distribution of resources, but factors must also be influenced by these social structures (6). Regarding the phenomenon of moral distress, an important element in creating conceptual clarity in our understanding of this concept is the careful study of the interrelationships between social structures and the laws of ethical agencies (17). That is, it must first be understood how factors can affect structures and, conversely, which factor is fundamental to social change (18).

For example, samples of organizational and individual factors contributing to moral distress include inadequate resources, nursing, and interpersonal relationships (19). This means that in an acute care hospital where nursing resources are insufficient to meet the patients' needs, addressing staffing issues as well as helping nurses reflect and ultimately improve their interpersonal relationships with their colleagues and students is constructive (17). Finally, the fourth characteristic presented is the critique of the prevailing social order (5, 16). The use of critical realism is seen as a tool to criticize illegitimate actions and to improve existing theories through criticism. McEvoy and Richards (2003) also note that although the use of critical realism is not necessarily a "commitment to a particular theory or socio-political agenda", it can be used to examine how structures maintain social inequalities (16).

In relation to moral distress, a detailed critique of the prevailing relationship between the organizational context and health care providers will help understand that moral distress goes beyond an individual failure of a health care provider or the result of faulty health care system. A critical realistic explanation can illustrate how the impact of individual characteristics and organizational contexts that lead to the experience of moral distress are combined (13). Some of the external structural constraints that affect the delivery of health care include economic, efficiency, and pervasive management approaches that have made it difficult for nurses to maintain ethical standards (22-20).

Nevertheless, nurses and other health care providers, as ethical factors, show their support or efforts to change these structures in overt and covert ways. Trying to circumvent policies that limit the level of care provided can be an example of these responses to change (23). The critical realism school of thought has a unique potential for designing, identifying, and understanding complex phenomena, like those existing in a healthcare system (24, 25). Critical realism has certain implications for the health care organization, especially in the nursing profession (1). To develop the use of this philosophical perspective, one must first become familiar with its role and effects on the nursing profession. To achieve this goal, the present study uses the narrative review approach to explain the role and effects of the philosophical school of critical realism in the nursing profession.

2- MATERIALS AND METHODS

2-1. Data sources

In this review study, a systemic search of electronic databases of Medline (via PubMed), Scopus, Web of Science, EMBASE, CINAHL, ProQuest, Cochrane Library, SID, Magiran, CIVILICA, and Google Scholar search engine was performed with no time limit up to March 2021, using the following keywords alone or in combination: "Realism, Critical realism, Nursing, Education, Knowledge, Research and Clinical, and Care". The search was performed independently and in duplicate by two reviewers and any disagreement between the reviews was resolved by the supervisor.

2-2. Study selection

Database search was done for suitable studies. Abstracts of the studies were screened for identification of eligible studies, full-text articles were obtained and assessed, and a final list of eligible studies was made. This process was done independently and in duplication by two reviewers and any disagreement was resolved by a third reviewer. References were organized and managed using EndNote software (version X8).

3- RESULTS

Results demonstrated that in the recent evidence of health care texts, critical realism offers a new perspective through the lens of realism for understanding nursing and health problems (26). Critical realism has certain implications for the health care organizations, especially in the nursing profession (1). Critical realism can have many benefits for the development of the nursing profession, which are mentioned in the form of the following;

3-1. Critical Realism and Nursing Education

Several practical implications are derived from this realistic vital framework for science education:

Critical realism, while recognizing the temporary and unstable nature of scientific knowledge and cautioning against epistemic dogmatism, confirms the rationality of the preferred choice of theories. As a result, educators are given

the right to include what they want in the curriculum. A class view of existence reflects an emphasis on lesson sequence that emphasizes rich experiential and conceptual learning in the classroom. A critical realist view of class ontology states that it is not a closed environment but a dynamic and open one in which various (and some unknown) causes are active and processes like learning occur in the context of this rich open environment. Therefore, teachers should be cautious about undue reliance on their assessments in such open system. Critical realism considers that different fields of knowledge discover aspects of a reality (27).

Critical realism in many ways has many benefits for the development of nursing knowledge. This philosophical school is able to create an environment based on multidisciplinary cooperation and participation in nursing sciences, theory development, and knowledge transfer. This school is a good choice for nursing science because of its ability to discover observations in known theories and social structures of health care (16). Reed (2006) argues that the recognition of a critical realist philosophy for the development of nursing knowledge creates a strong link between nursing and science (28).

He referred to six principles of critical realism which address the following epistemological and ontological ideas: the first principle is about the latest view of the concept of empiricism, which calls for the use of innovative tools, methods, and technologies to rationalize knowledge production. This will lead to the use of art tools, poems, mental methods, and experimental tools and the use of more combined methods in nursing research. The second principle of critical realism is related to the use of a new epistemology that helps all teachers and health care professionals use all the ways of knowing in nursing. The third principle of critical realism refers to the affirmation of a basic pattern, the ability to self-organize, professional organizations, humanism, spirituality, and the potential for empowerment. Using these principles, critical realism allows a diverse range of human experiences to be used to construct theories of human care during the health and disease process. The next principle is about respecting differences and constantly criticizing injustice. Critical realism is by definition a liberating nature that frees individuals from invalid beliefs. The fifth principle of critical realism presupposes universal/common principles as well as uniqueness. Critical realism values the assumptions of common principles as well as uniqueness (28). This principle allows access to various models explaining the phenomena related to nursing practice and as a result the acceptance of different interpretations of the role and image of nurses in society (1).

The concept of recognizing universal principles, common facts, and individual interpretation also provides philosophical foundations that prove patient-centered care. The last principle of the critical realism approach is continuous evaluation, which leads to meta-observations, theories, and philosophies that are open, dynamic, and context-related (28). Critical realism offers an approach that demonstrates the importance of understanding how the concept of context influences knowledge construction (27). This means that the nurse must put his theoretical knowledge in the context of specific experience (1).

Critical realist philosophy allows us to understand all individuals as thinkers/reflectors with an agency, and how these factors interact with social structures such as organizations (e.g. hospitals) and collective identities (such as nurses). Students have a variety of motivations for enrolling in nursing courses and bring a variety of life experiences, but their undergraduate experience should help them acquire the

necessary characteristics of a professional nurse's collective identity. These characteristics include critical thinking, the use of an evidence-based approach, person-centered care, and the range of skills and knowledge required by nurses at the time of graduation. Critical realism not only recognizes the mission of nurses but can also help students understand the awareness of the people who care for them and the impact of living conditions and social structures. This contributes well to the development of a new nursing curriculum that highlights the principles of 21st-century health care, including independent decision-making, chronic disease self-management, and social determinants of health. Critical realism provides a robust solution to the need for nursing curricula to have a structural and theoretical framework that supports the student's progress as a professional through a serious link to modern health care systems (29).

3-2. Research and Critical Realism

Critical realism is a relatively new philosophical view that combines the realist ontological view with the epistemology of relativists (30). They have accepted that scientific observations are erroneous because they are formed within the conceptual framework of scientists (16). This is similar to the view of post-positivist scientists that both philosophical schools are critical of real truth and believe that there is a reality that is not dependent on human understanding. Realists offer an anti-positivist perspective on science. They believe that quantitative or qualitative research methods are used to gain insights into the social context that can only be achieved by describing the phenomenon (31). In terms of critical realism, the main goal of scientific research is to acquire knowledge about basic causal mechanisms. Production mechanisms refer to structures, powers, and relationships that explain how conditions work below a (visible) level (32). Critical realists believe that the mechanisms of production, although not directly observable, are nevertheless real and recognizable through their effects (33). In the positivist view, causality relies on the constant continuity of events connected to time and space, while in critical realism there is a belief that the natural world acts as a multidimensional open system (34) and that production mechanisms may be up to date. The provision of special conditions remains latent and is activated by the provision of special conditions (35).

Pawson and Tilley summarize the textual dependence of production mechanisms as follows: context + mechanism = result (32). The critical realism view holds that the most important reason for the success of natural scientists is that they are able to isolate causal mechanisms under perfectly controlled conditions. But in the social sciences, it is not possible and it is necessary to act in the real world and seek to identify potential causes where the mechanism occurs in its most important form and has the least impact by disruptive factors (36). Philosophers of critical realism believe that understanding the classes of the natural world is important because causal mechanisms operate at different layers and levels of reality (37).

This philosophy holds that political discourse is used as a powerful tool for control and is internalized by influencing the belief systems held by the people who own them. And the socio-economic effects embodied in the relationship between capital and labor have the greatest impact on maintaining health inequalities (38). Critical realists have sought to transcend this dichotomy by emphasizing the interdependence of structure and authority. Social structures provide resources that enable individuals to act, as well as limit individual behaviors. However, the behavior of human factors is not determined solely by social structures,

because factors can also shape social structures by responding creatively to the conditions in which they find themselves (39). Critical realism is a relatively new philosophical approach that Archer (1982, 1995) developed a "morphogenetic theory" that helps explain why we should consider the residual effects of history when analyzing the social world. According to Archer, we live with a legacy of structural conditions that we have inherited from the past. The consequence of these historical influences. Like gender domination of nursing by the medical profession, it continues to affect the division of labor between professions, although attempts are being made to transform this patriarchal social structure (40, 41).

Critical realism uses a variety of methods to critique the mechanisms of production in social research, including ethnography, participatory observations, structured or semi-structured interviews, descriptive statistics, and participatory, semi-empirical action (42). Critical realism focuses on the practical application of results rather than research in the field of science; Because it emphasizes the logical and transparent process of producing evidence for awareness of policies and actions, based on what factors are appropriate for whom and under what circumstances and this philosophy focuses on the practical application of the results rather than research (43). Critical realism is a realistic approach to evaluating interventions and programs, and by examining the available evidence, it explains "what is useful to whom and why." Pawson and Tilley (1997) have suggested that there are "contexts", "mechanisms", and "outcomes" for interventions. The context is the situation, environment, or purpose of the study (32). Mechanisms are the "causal power of objects", and are in fact components that exist in a social structure, context, culture, or environment that cause change or change. A combination of context and mechanisms produces a result that may be observed and measured (44). Taken together, these components explain what happens, when, and most importantly, why it happens. Thus, nursing managers, policymakers, and those involved in health promotion and public health roles can use critical realism to evaluate the available evidence on an issue or issue. To illustrate the potential contribution of health research to critical realism, we can refer to the study on Acquired Immune Deficiency Syndrome (AIDS) by Porter (2001) (45); while positivist research focuses on discovering the causes and processes of AIDS, the interpretive approach is based on trying to understand the experiences of individuals and their families and how they affect the disease (46).

However, with a realistic research approach, what is visible is revealed, values and beliefs are revealed, and relationships are revealed by methodically explaining the roots and social structures that influence AIDS. In this example, critical realism acts as a bridge to the "gap between positivism and interpretivism" (47). Bergin et al. (2008) also used critical realism as a framework for the sociological study of mental illness (48). Using a critical realist perspective to examine the results of interventional studies can also, at the empirical level, provide a more comprehensive explanation of the results. Examining an intervention at different ontology levels may involve questioning how the intervention is presented. For example, presenting an intervention to an individual health care team may provide insight into how team dynamics affect the effectiveness of the intervention at the empirical level of the ontology. Such insights can allow researchers to theorize and experiment with production mechanisms that occur at the real level of ontology, to be more precise about what is being measured less, and to make more

useful results. In addition, if researchers use a hybrid methodological approach to study the intervention, they may be able to determine which parts of the intervention are useful and which ones help, thus giving more depth to the results (13). For example, in an interdisciplinary oncology outpatient clinic, a research team used quantitative surveys as well as qualitative focus groups and individual interviews to evaluate the effectiveness of interventions such as joint interdisciplinary courses (23).

3-3. Critical Realism and Nursing Clinic

Critical realism can provide a framework for guiding appropriate interventions in the development of nursing practice and their realistic evaluation. Also, it can lower the current prominent status of post-positivist knowledge in nursing clinics by accepting the true meaning of evidence-based care. Critical realism is also effective in understanding the complex context of the nursing world, improving nursing interventions, and explaining psychosocial pathways (28). Based on the critical realist, nursing organizations will be affected by socialization and broader structural constraints such as organizational norms and values, nursing regulations, and power relations. Nurses are seen as agents who interact with the structure, indicating that nurses and social structures have a degree of interdependence. However, the nurse controls her individuality through her attitude and commitment to her performance and professional development. Nurses' behaviors stem from patterns of interaction between social structures and their mechanisms on the one hand, and individuals and their own causal power on the other. Based on this, nursing positions, assessment tools, organizational and governance mechanisms all have a causal power that communicates with each other and depending on their combination can simultaneously and selectively affect social actions and activities in specific organizational areas (49).

Critical realism can also help bridge the gap between nursing theory and practice. Scientific research based on the philosophy of critical realism helps to bridge the gap between theory and clinical practice by developing a framework for theorizing or conceptualizing intervention or observation related to the research goal, by supporting nursing clinical practice. For example, evaluating non-pharmacological pain management interventions from a critical realist perspective requires the inevitable interaction of theory and clinic. The assessment, in this case, will not only focus on the observed events such as pain or anxiety score but will go beyond analyzing the structural elements of the proposed interventions and the mechanisms and causes of pain. Based on critical realism, the success of the intervention should be examined by asking the following questions; what changes for whom, with whom, in what context? From this perspective, pain theories, such as gate theory, are representations that allow the nurse to explain the relationship between the various events observed and the non-pharmacological interventions offered (50). Nurses can also use the lens of the critique of realist class ontology to observe nursing phenomena.

As mentioned, Bhaskar proposes three levels for ontology: "experimental", "actual", and "real". These levels are shown using the tree representation in **Figure 1**. The first and most superficial is the "experimental" layer, which is what can be observed or experienced (tree branches in **Figure 1**). Below this experimental level is the "actual or objective layer": what happens that may not be observed but regulates the experimental level (walking on the mountain is hidden by Valin in Figure 1). Bhaskar stated that there is a final layer, which he calls "real", which underlies the "actual layer" (tree roots in **Figure 1**), which are "production mechanisms" that

contribute to our understanding of the "actual layer". They do, but they are not entirely explanatory. Rather, they are "tendencies" or factors of creation (51). The following example illustrates the use of critical ontological levels of ontology more effectively; at the "experimental level", uterine contractions are experienced by a mother in labor and observed by the caregiver. Cervical dilatation can also be measured. Oxytocin causes the uterine myometrium to contract and dilate the cervix, the position of the fetal head causes uniform pressure on the cervix, and the upright standing position (cephalic) helps to lower the fetal head. The specialist physician understands this level of reality using test analysis, uterine muscle dissection, and the laws of physics (gravity). It is the deepest "real" level at which the production mechanisms for stimulating oxytocin secretion are active. Many factors are involved in this. Physiologically, adrenaline mediates oxytocin secretion. But adrenaline itself is very sensitive to a number of other mechanisms. These stimuli include environmental stimuli. Immersion in water or in an environment such as home lowers adrenaline levels and increases oxytocin levels. In addition, interpersonal/relationship factors such as verbal encouragement and empathetic responses from companions can increase oxytocin and decrease adrenaline. Psychological dimensions such as a woman's cognitive and emotional characteristics can also affect her response to threats. Thus, there are a number of production and overlapping mechanisms that work at the "real" level and ultimately affect uterine contractions at the "experimental" level (52).

Critical realism will help in understanding complex issues in human health practice (1). Critical realism is the scope for guiding how programs or policies are evaluated and focusing on understanding the factors that may affect production mechanisms. It is especially important to understand how evidence is implemented in practice (16). Critical realism faces complexities (8), and can shed light on the various patient-related outcomes and occupational activities performed during nursing care courses (53). For example, Wilson and McCormack (2006) suggested that critical realism could be used in clinical development and realistic evaluation of interventions to understand their effects (54). Also, using the philosophical perspective of critical realism can help in the development of leadership in nursing, identifying the factors affecting the profession and professional independence of different nursing trends from the medical profession (55, 56).

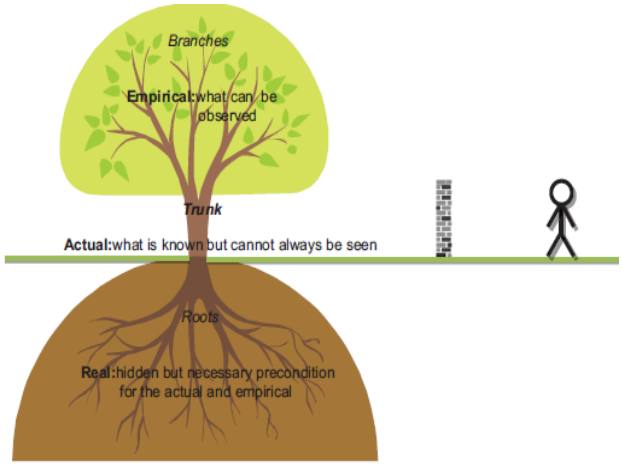

Fig.1: Tree diagram of three levels of ontology: "experimental", "actual" and "real" (34).

4- CONCLUSION

Nursing is a distinct scientific discipline with specific knowledge gained through research and clinical practice. Documents collected from various research paradigms, theories, and philosophies of nursing are more reliable to address the fundamental issue of the gap between theory and practice in nursing. In addition, health care practices today are multifaceted and the professional practice

of nursing involves the development of knowledge to support this complexity. Critical realism is a philosophical approach that challenges such complexities and enables nursing researchers to collaborate in different disciplines and methods. Critical realism is a promising approach that encourages seeking beyond the surface to explore the fundamental processes underlying natural and social phenomena. The realistic approaches that emerge from critical realism are commensurate with the complexity of health care performance and help improve the understanding of the nature of nursing work and decision-making.

The continuous shift towards hybrid research methods and triangulation of important evidence-based nursing analysis facilitate critical realism for wider development and acceptance in the nursing profession. It is hoped that the discussion of critical realism will be a stimulus to revitalize critical realism as a philosophy of science in nursing and provide a valuable context for patients, families, nurses, and general health care structures. However, while the realistic approach presents an attractive approach to better understand complex interventions, sufficient attention has not been paid to the philosophical roots of this framework in nursing, resulting in lower applications.

5- AUTHORS' CONTRIBUTIONS

Study conception or design: FR, and AH; Data analyzing and draft manuscript preparation: FR; Critical revision of the paper: FR, and AH; Supervision of the research: FR and AH; Final approval of the version to be published: FR, and AH.

6- CONFLICT OF INTEREST: None.

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