
Self-efficacy in the Context of PMTCT of HIV: A Concept Clarification

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Abstract

Despite the effort and emphasis of Prevention of Mother to Child Transmission (PMTCT) strategies, the rate of Mother-to-child transmission (MTCT) of HIV continue to be high. Self-efficacy beliefs may be very helpful for not only perception and avoidance of risk for MTCT of HIV but also for coping with the disease and empowering health and socio-economic conditions. However, previous analyses of self-efficacy were found to be only partially useful in the context of PMTCT of HIV. The purpose of this paper is to explore the current knowledge about the self-efficacy concept and clarify its theoretical application in the context of PMTCT of HIV research. The Norris method of concept clarification was used as the guiding framework.

Literature Review. Literature review was conducted in MEDLINE, PUBMED, CINHALL, and Google Scholar. Six antecedents of self-efficacy identified were perceived risk, challenges, tasks, goals, adversity, and difficulty. High self-efficacy was found to influence the development of cognitive, personal, behavioral, and environmental factors which influence the adherence of PMTCT strategies and prevention of MTCT of HIV. The clarification of the self-efficacy concept will assist nurse researchers, practitioners, and educators in developing interventions and education strategies aimed at promoting PMTCT of HIV.

Keywords: Concept clarification, HIV positive women, Norris method, PMTCT, Self- efficacy

1. Introduction

1.1 Introduce the Problem

The HIV and AIDS have significantly affected communities worldwide. United Nations Program on HIV and AIDS (UNAIDS, 2021) reported that approximately 38 million people worldwide were living with HIV, and 1.8 million people were newly infected with HIV in 2020. In addition, HIV and AIDS are one of leading causes of mortality among women of reproductive age. Additionally, an estimated 180, 000 children under 15 years of age acquired HIV and more than 90% of them are due to MTCT. Furthermore, 90% of MTCT occur in sub-Saharan Africa (SSA) (UNAIDS, 2021) and evidently four hundred children are infected every day in Rwanda (UNAIDS, 2017).

Without preventive interventions in SSA countries, 20-45% of HIV positive mothers will transmit HIV to their children. Among that proportion, five to 10% occur during pregnancy, 10-20% during labor and delivery, and five to 20% through breastfeeding (World Health Organization [WHO], 2019). The global health plan was to reduce MTCT of HIV by 90% and reduce the HIV related maternal mortality rate by 70% before 2030 (UNAIDS, 2021). To achieve this target, prevention, treatment, and care are needed and should be delivered to at least 80% of HIV positive pregnant women and their children. The PMTCT strategy is one of the approaches to reduce the risk of HIV transmission from a mother to her child. This strategy includes Anti-Retroviral Therapy (ARV) given to pregnant women during labor and breastfeeding, ARV prophylaxes given to breastfed infants; access to HIV testing and counselling, safe delivery, and infant feeding information, counselling, as well as support for safer childbirth practices (Aregbesola, & Adeoye, 2018; WHO, 2019).

Effort has been implemented to make PMTCT strategies more effective through ART, PMTCT guidelines, and services, as well as providing support to HIV positive women. However, the adherence to all PMTCT strategies among HIV infected women remains low and continues to be a major health concern in both low and high-income countries (Aregbesola, & Adeoye, 2018) and the MTCT of HIV rate is high (Nachega et al, 2012; Oladokun, Ige, & Osinusi, 2013). Self-efficacy has been identified as a concept which is applicable in various areas of research, such as health promotion, health risk behavior changes, self-care chronic health conditions, compliance with treatments, and especially to HIV treatment adherence (Elfeddal et al., 2012; Weng, Dai, Huang, Chiang, 2010; Win good, Simpson-Robinson, Braxton, & Raiford, 2011). Oladokun et al. (2013) state that self-efficacy is highly predictive of ART adherence and must be considered before initiating ART.

There is an association between self-efficacy and ART adherence in HIV patients (Oladokun et al., 2013). Looking into self-efficacy beliefs may be helpful for not only perception and avoidance of risk for MTCT of HIV but also for coping with the disease and empowering health and socio-economic conditions. However, previous analyses of self-efficacy were found to be only partially useful in the context of preventing MTCT of HIV. Concept clarification is used to explore the meaning of a concept that is connected to the knowledge base of nursing (Rodgers & Knafl, 2000). Therefore, the purpose of this paper is to explore the current knowledge about the self-efficacy concept and clarify its theoretical application in the context of PMTCT of HIV research. Such insight is vital to safeguarding the welfare of both mothers and children.

1.2 Short Description of PMTCT of HIV

MTCT or vertical transmission of HIV occurs when a mother transmits HIV to her baby during pregnancy, labor, and delivery, or breastfeeding. An HIV positive woman has the responsibility to PMTCT of HIV to her infant. She can do this through different PMTCT strategies, such as HIV testing as early as possible before or during pregnancy; prevent unwanted pregnancies; start and continue ART and HIV counseling during pregnancy, labor, and breastfeeding; get a safe childbirth practice; provide ART prophylactic to her infant; do appropriate infant feeding; and have access to physical, social, and psychological support (WHO, 2019). The risk of MTCT of

HIV can be 1% or less if the HIV positive women follow PMTCT strategies, take ART daily as prescribed, and give ART prophylactic to her infant for four to six weeks after giving birth (Nachega et al, 2012; WHO, 2019). Some HIV positive women decide to breastfeed their infants, at that time, the ART prophylactic will be given to the infants during the breastfeeding period (WHO, 2019).

1.3 The Link Between Self-Efficacy Concept and PMTCT of HIV

Being diagnosed with HIV and thinking the MTCT of HIV may be a source of challenges and demotivation (Li et al., 2011). Some HIV positive women may be discouraged to take ART, seek care, and adhere to PMTCT strategies (Li et al., 2011). They are challenged because of their HIV status, perceived risk of MTCT of HIV to her infant, and found this situation difficult. It contributes to feelings of discouragement, hopelessness, and an absence of planning to participating in strategies to PMTCT of HIV (Klaus et al., 2014). These also relate to low levels of knowledge and awareness on HIV (Li et al., 2011). The literature reviewed, highlight that perceived risk, challenges, and difficulties are the antecedents of self-efficacy and were found to contribute to the experiences of women after being diagnosed HIV positive and with an increased risk of MTCT of HIV. The literature also showed that self-efficacy can influence encouragement, confidence, and performance through its attributes, such as the ability to control emotion and cognitive capability. Those attributes may be linked with the need of HIV positive women to increase knowledge and awareness which may then result in the encouragement among the women to overcome challenges and move forward in the process of PMTCT of HIV.

HIV positive women may find PMTCT strategies as complex and challenging tasks. Using and working with peers who were in similar positions, and who performed PMTCT strategies and have an HIV negative bay may help the HIV positive women to perceive the tasks as doable. The HIV positive women may start to compare their own competences and may see it as achievable if the peers have overcome the challenges. They develop confidence, commitment, motivation, strong personality, and effort to face PMTCT of HIV. They start to change their behaviour and attitude and are highly motivated to adhere to the PMTCT strategies, and the beliefs to ensure a baby without HIV. The literature supports that self-efficacy may be linked with PMTCT of HIV in terms of improving PMTCT of HIV through its associated consequences, such as increasing motivation, commitment, self-responsibility, strong personality throughout the achievement of desired goal and success.

1.2 Significance

Concept clarification process provides a comprehensible meaning of the concept for future use in the practice or research field (Meleis, 2012). This concept clarification will offer guidance to researchers who may later conduct research that involves self-efficacy in the context of PMTCT of HIV. We believe that a better understanding of the concept of self-efficacy in the context of PMTCT of HIV will be useful in developing a conceptual framework that could guide future research, clinical practice, and policy making. Furthermore, it will be useful in promoting healthy behavior changes while delivering quality care.

2. Method

Concept clarification is defined as a “highly creative, rigorous, and intuitive process that can generate multiple useful meanings for a single concept” (Kramer, 1993, p. 406). It represents an aspect of basic research in nursing, and it is a necessary step in the process of nursing research and theory development (Kramer, 1993). The Norris’ method of concept clarification (Meleis, 2012; Norris, 1982) is used as the guiding framework for this concept clarification. This method has the power to foster the development of increasingly meaningful descriptions of a phenomenon (Norris, 1982). It is also useful in advancing and developing descriptions of the phenomenon to relate to a unique purpose and perspective for nursing practice (Meleis, 2012). Consequently, a body of knowledge in nursing can further be developed through questions and hypotheses developed from advanced descriptions (Kramer, 1993). Norris (1982) describes concept clarification as a means to explicate a phenomenon of interest using critical thinking skills. Norris (1982) describes five steps to this process: (1) observing and describing the phenomenon; (2) systematization and description of the phenomenon; (3) operational definition; (4) construct a model; and (5) develop hypotheses for future research.

2.1 Literature Review

A literature-based analysis can be used to determine the current status and understanding of a selected concept as well as to identify alternative ways of thinking about a situation (Rodgers & Knafel, 2000). We conducted a literature search in numerous health databases, including MEDLINE, PUBMED, CINAHL, and Google Scholar. Additionally, manual searches were carried out from the internet and reference list of the shortlisted articles. The search was undertaken using the keywords, such as “self-efficacy *OR empower OR self-determine* OR focus of control OR perceived autonomy AND adherence OR non-adherence OR compliance OR noncompliance OR concordance OR non-concordance OR autonomous regulation of medication taking AND HIV or aids OR human immunodeficiency virus”. Studies were selected if they referenced or related to self-efficacy and PMTCT of HIV; were written in English; were both qualitative and quantitative research as well as conceptual or theoretical literature. No limit was set for age and years of publication and studies not in English were excluded. The initial search yielded 476 MEDLINE, 328 CINAHL, and 723 PUBMED which gave me a total of 1527 articles. Of these 1527 articles, 1223 were excluded based on duplication and relevance, leaving a total of 304 articles for further screening. After the title and abstract screening, 67 articles were considered relevant. Twenty-one were included after reading all 67 articles in full. All the selected articles were imported to RefWorks data base manager.

3. Results

In this section, we used the steps of Norris’ (1982) method of concept clarification to share the results. We proceeded through each of the five steps sequentially.

In the Results section, summarize the collected data and the analysis performed on those data relevant to the discourse that is to follow. Report the data in sufficient detail to justify your conclusions. Mention all relevant results, including those that run counter to expectation; be sure to include small effect sizes (or statistically nonsignificant findings) when theory predicts large

(or statistically significant) ones. Do not hide uncomfortable results by omission. Do not include individual scores or raw data with the exception, for example, of single-case designs or illustrative examples. In the spirit of data sharing (encouraged by APA and other professional associations and sometimes required by funding agencies), raw data, including study characteristics and individual effect sizes used in a meta-analysis, can be made available on supplemental online archives.

3.1 Step one: Observing and Describing the Phenomenon

Self-efficacy has its origin in social learning theory. In this theory, self-efficacy is referred to as “the beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (McAlister, Perry, & Parcel, 2008, p. 172). In his work, Bandura Bandura and Adams (1977) express the view that “expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences” (p. 194). Exploration of the use of self-efficacy in various situations reveals that the meaning of the concept is more than individual's performance of the task; the concept is associated with certain qualities such as commitment, motivation, personal perception of ability, and determination (Cherry, 2010). Exploration of the field of education revealed the uses of the self-efficacy concept in relation to academic performance, achievement and career decision making (Ruble, Usher, & McGrew, 2011).

In health care professions, self-efficacy is commonly related to health promotion (Elfeddal et al., 2012), health risk behavior changes (Wingood et al., 2011), self-care of chronic health conditions (Weng et al., 2010), and compliance with treatments (Li et al., 2011). In the course of the literature review, self-concept, self-esteem, and self-confidence were found to be interrelated with the concept of self-efficacy, however, they are each unique. Self-concept is defined as “a composite view of oneself, the totality of the individual's thought and feelings in reference to himself or herself as a being” (Zulkosky, 2009, p. 6). Self-esteem refers to a general feeling of self-worth or self-value (Bandura, 1986). Self-confidence refers to the perception that one is competent or capable of fulfilling a particular expectation (Bandura, 1986). Self-efficacy is not concerned with self-value or expectation but rather one's perceived capability of achieving the desired goal; consequently, self-efficacy is different (Bandura, 1986).

3.2 Step two: Systematization and Description of the Phenomenon

The clarification of a concept begins with an overview of common definitions (Rodgers & Knafl, 2000). An attempt was made to explore a wide variety of sources to define the self-efficacy concept and identify as many uses and aspects of the concept as possible. Sources included dictionaries, scholarly articles within the nursing discipline, the articles from other disciplines, and grey literature. Definitions will be addressed from broad to narrow perspective. In this section, I will describe the phenomenon of self-efficacy according to its antecedents, attributes, and consequences, categories, and thought patterns and responses.

3.2.1 Antecedents

The antecedents are the events or incidents that must occur prior to the occurrence of the concept (Walker & Avant, 2005). In all the literature reviewed, self-efficacy arises when the individual is faced with challenging or difficult situations. The antecedents of self-efficacy that arise from the literature are perceived risk, challenges, task, goal, adversity, difficult or motivation. Bandura and Adams (1977) state that “the expectations of self-efficacy are based on four major sources of information, such as performance accomplishment, verbal persuasion, vicarious experiences, and physiological states” (p. 195). These components help individuals to determine if they believe having the capability to accomplish specific tasks. Williams and Williams (2010) note that individuals with high level of self-efficacy approach difficult tasks as challenges to master rather than threats to be avoided.

3.2.2 Attributes

Determining the attributes is the heart of the concept clarification. Based on the review and analysis of all collected definitions, four defining attributes of self-efficacy were identified: (1) ability to control emotional arousal; (2) utilization of cognitive capability to obtain a beneficial outcome; (3) a belief of self-confidence, self-determinism, and self-responsibility; and (4) learning through personal experiences and observations (Weng et al., 2010; Zulkosky, 2009). These attributes appear repeatedly in references to the concept and are evidence in both the theoretical and operational definitions making the concept unique and identifiable (Bandura, & Adams, 1977).

3.2.3 Consequences

Consequences are those events or incidents that occur as a result of the occurrence of the concept (Meleis, 2012; Walker, & Avant, 2005). According to the result of literature analysis, the consequences associated with self-efficacy include the following: (a) increase of motivation and satisfaction; (b) achievement of the desired goal; (c) confident in one’s capacity to perform a task; (d) commitment, self-determinism, and self-responsibility; (e) reasoning ability; (f) strong personality to tolerate struggles and difficulties; and (f) success (Nokes et al., 2012; Zulkosky, 2009). These consequences illustrate the reasons for the popularities of the studies of self-efficacy and the value seen in the ability to aid in its development. Clarification of the self-efficacy concept includes an aspect related to enhancing ability and well-being.

3.2.4 Categories

This steps in concept clarification involves the process of developing a system of observation and descriptions by identifying specific behaviors and factors that lead up to the phenomenon (Norris, 1982). An analysis of the literature suggests four broad categories that interact to determine motivation and human functioning behavior which trigger self-efficacy, such as cognitive, behavior, personal, and environmental factors. According to Bandura (1986), human functioning is the result of the interaction of these factors.

Cognitive factors. Cognitive factors are composed of four processes (sub-categories) of goal realization, such as self-observation, self-evaluation, self-reaction, and self-efficacy (Bandura &

Adams, 1977). These components are interrelated and each having an effect on motivation and goal attainment (Redmond, 2010). HIV positive women with a high level of self-efficacy are more likely to set higher goals, commit to changes that are more difficult, and strive to meet those goals (McAlister et al., 2008). Throughout the process of achieving their goals, people compared their performance to the desired performance (self-efficacy); observed and monitored themselves as they work towards their goals (self-observation); tried to modify their behaviors based on their evaluation on their progress towards their goals (self-evaluation); and executed necessary behaviors to produce specific performance attainment (self-reaction) (Redmond, 2010). A major function of thought is to enable people to predict the occurrence of events and to create the means for exercising control over different issues that affect their daily lives (Bandura & Adams, 1977).

Behavioral factors. People's behavior influences and is influenced by personal factors and social environment. Bandura (2008) accepts the possibility that an individual's behavior can impact the environment through personal factors, cognitive skills, or attitudes. Behavior is controlled or determined by the individual through external social stimulus (McAlister et al., 2008).

Personal factors. Self-efficacy beliefs are an important aspect of human motivation and behavior as well as influence the actions that can affect one's life. Regarding self-efficacy, Bandura and Adams (1977) "explain that it refers to beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 194). According to Pajares (2003), individuals are imbued with certain capabilities that define what is to be human. These capabilities provide human beings with cognitive means by which they are influential in determining their own destiny (Bandura, 1986).

Environmental factors. According to Bandura (1997), two levels of efficacy (low and high) interact with two types of environments (responsive and unresponsive) to produce the following four predictable variables: success, depression, apathy and helplessness, and effort intensification or change of courses.

3.2.4 Thought patterns and responses

Self-efficacy has several effects on thought patterns and responses. People with high level of self-efficacy have motivation and persistence in the face of challenges and obstacles, have the beliefs of their performances, tend to take a wider view of a task in order to determine the best plan, and can address the problems effectively. While those with a lower level of self-efficacy doubt about their ability to perform difficult tasks, believe tasks to be harder than they are, give up easily, and become erratic and ineffective when addressing problems (Bandura, 1986).

3.3 Step Three: Operational Definition

The third step of concept clarification is to develop a means of identifying and measuring the concepts (Norris, 1982). Norris (1982) continue to describe an operational definition as one that answers at least one question: "How will I know the concept when I see it in operation?" Other researchers emphasize the importance of measurement, which indicates that an operational definition clarifies ways to measure the behaviors observed in a phenomenon (Meleis, 2012).

Walker and Avant (2005) state that without operational definition, there is no way to test and validate the theory and its concepts in the real world. Based on the identified defining attributes, the operation definition of self-efficacy was synthesized as follows: Self-efficacy is a strong subjective concept, but observational and measurable. It focuses on a person's fullest utilization of his cognitive capability to produce a beneficial outcome through learning by personal experience and observation, and control emotional arousal. It is mediated by one's level of self-confidence, self-determination, self-responsibility, and self-control.

3.4 Step Four: Construct a Model

The fourth step in Norris's concept clarification is to construct a model. We developed a model that will include the concept of self-efficacy to explain its applicability to prevent MTCT of HIV (see figure 1). In this model, the HIV positive women are challenged because of their HIV status, perceived risk of MTCT of HIV to their infants, found the PMTCT of HIV situation difficult and were not able to plan any tasks to PMTCT of HIV. This may be related to the low level of self-efficacy. The low level of self-efficacy among HIV positive women is enhanced or developed through observational learning, performance experiences, verbal persuasion, and emotional arousal. Moreover, high level of self-efficacy influences the development of cognitive, behavioral, personal, and environmental factors. The development of cognitive, behavioral, personal, and environmental factors influences then the adherence to PMTCT strategies and can influence the PMTCT of HIV.

3.5 Step Five: Developing a Hypotheses for Future Research

According to the Norris method of concept clarification, hypotheses are developed from the operational definition and the model. Ultimately, the hypotheses will be empirically tested, and then accepted or rejected. The operational definition and model will be revised based on the results of these tests, and more hypotheses will be developed. This process will continue until the phenomenon is accurately described to the implementor's satisfaction (Norris, 1982). The following hypotheses have been developed using the author's operational definition and the model described (figure 1). (1) Increases in personal experience, observational learning, verbal persuasion, and emotional arousal are associated with a high level of self-efficacy. (2) High level of self-efficacy is correlated with the development of personal, behavioral, cognitive, and environmental factors. (3) A combination of personal, behavioral, cognitive, and environmental factors influences the adherence to PMTCT strategies and can influence the PMTCT of HIV.

4. Discussion

This concept clarification process provides an opportunity to clarify the self-efficacy concept and creates a great learning opportunity. Self-efficacy is an important concept because it ultimately affects behavior and outcomes. The findings from this concept clarification demonstrated a connection between self-efficacy concept and PMTCT of HIV outcome (figure 1). This work demonstrated how HIV positive women with low level of self-efficacy can be supported to develop high level of self-efficacy using the four sources of information. Also, this concept clarification shows the link between high level of self-efficacy and the development of cognitive, behavioral, personal, and environmental factors. Furthermore, the work shows how the

combination of cognitive, behavioral, personal, and environmental factors influence the adherence to PMTCT strategies with a result of PMTCT of HIV. The main significance of this work is the developed model which could be adapted not only by nurses but also by other healthcare professionals working with the HIV positive women to promote PMTCT of HIV. Moreover, the concept model could also be used in designing educational and health promotional strategies.

The process of concept clarification indicates that self-efficacy appears to be a concept that has been widely used by different disciplines and have robust predictable power to influence people's capability and motivation toward healthy behavior (Li et al., 2011). However, people may adopt health related behavior not because they perceive capability but because they are motivated. Lee (1989) reported that self-efficacy focusses on expected outcomes of behavior whether people like or dislike performing the behavior. Self-efficacy literature has predicted the expected behavior, but limited literature identified factors that determine people's motivation.

Also, self-efficacy as a concept helps people with low level to develop a strong sense of self-efficacy to overcome their challenges and achieve their target (Bandura, 1986). The statement that people behave in certain ways because of their level of self-efficacy is not testable. People's behavior may be linked with environmental or other influences. The statement lacks precise predictions, scientific framework with hypothetical process, and with no clear relationship between observable inputs and observable outcomes.

It is noteworthy that the results of many of empirical studies relating to the four sources of information of self-efficacy are not convincing. Studies have focused on promoting self-efficacy by helping HIV positive women to learn new behavior through modeling, encouragement, and experiences (Bandura & Adams, 1977; Lee, 1989; Williams & Williams, 2010). While most studies from our analysis link positive experience and satisfaction with self-efficacy, there are limited studies that reported barriers to effectiveness of self-efficacy.

Conclusion

Self-efficacy is a fundamental concept to develop a healthy and productive society. It is one of the best strategies to acquire a challenging task or behavior by using one's cognitive capability and learning through observation. By defining, analyzing, and researching concepts such as self-efficacy, nursing can provide valuable knowledge to the discipline. This will ultimately be valuable as nurses continue to build an evidence-based practice. Self-efficacy is a concept that influences how people think, feel, motivate themselves, and act. A person's self-efficacy beliefs determine their level of motivation, as reflected in how much effort they will exert in the endeavor and how long they will persevere in facing obstacles (Bandura, 1986). HIV positive women must have a strong sense of self-efficacy to sustain the effort needed to overcome the challenges related to the risk of being HIV positive and to MTCT of HIV.

We clarified the concept of self-efficacy in the context of PMTCT of HIV by identifying the concept and describing the phenomenon of interest from within the discipline and from the viewpoint of other disciplines; provide an operational definition; construct a model and developing a hypothesis. Moreover, the findings of this concept clarification can be used as a

baseline for future exploration of applicability of self-efficacy concept in relation to PMTCT of HIV. Based on the findings of this concept clarification, further exploration is proposed in the area of empirical studies to identify barriers to effectiveness of self-efficacy. Likewise, further clarification should be focused on understanding the relationship between behavioral influential factors other than self-efficacy, and factors that determine people's motivation which can be area of focus for future research.

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Figure 1: Self-efficacy Model in the Context of PMTCT Program Adherence

