Journal of Economics and Public Health
Volume 3 No 1, March 2024
e-ISSN 2828-5026; p-ISSN 2828-5352
http://jurnal.globalhealthsciencegroup.com/index.php/JEPH

APPLICATION OF SELF-EFFICACY THEORY FOR IMPROVING ADHERENCE OF OLDER ADULT PATIENTS WITH GLAUCOMA'S MEDICATION

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ABSTRACT

Glaucoma is a group of eye conditions that damage the optic nerve, leading to vision loss. Although glaucoma can affect individuals of all ages, the risk of developing the disease rises with age. This article displays the risk factors associated with medication non-adherence and the crucial role of nurses in supporting older adults with glaucoma in their medication adherence journey using self-efficacy theory as a guiding framework. Based on the findings in several studies, it was identified two significant risk factors associated with medication adherence. The first risk factor is patient age, indicating that older patients were more likely to struggle with adherence. This implies that as patients get older, they may face challenges in adhering to their prescribed medication. The second risk factor is the presence of more than three multiple chronic illnesses with poly-medications. This implies that individuals who have multiple chronic illnesses and are taking multiple medications concurrently are at a higher risk of non-adherence to their medication regimen. The complexity and burden of managing multiple conditions and medications may contribute to difficulties in following the prescribed treatment plan. Tailoring the application of self-efficacy theory to the specific needs and preferences of older adults with glaucoma is essential for effective implementation. Conclusion: Nurses as healthcare professionals play a crucial role in supporting older adults with glaucoma in their medication adherence journey using self-efficacy theory as a guiding framework, minimizing the risk of progression, and preventing further vision loss.

Keywords: adherence; glaucoma; older adult; self-efficacy

INTRODUCTION

As the global aging phenomenon is projected the elderly population will reach 2.1 billion by 2050 and life expectancy is increasing across the world, this can lead to an increase in the prevalence of age-related eye diseases in the advanced age. (1-2) Glaucoma is indeed a significant age-related eye disease that contributes to visual impairment and blindness worldwide. The Vision 2020 initiative, led by the World Health Organization (WHO) in 2012, identified glaucoma as one of the priority eye diseases. The International Agency for the Prevention of Blindness (IAPB) also recognized the importance of addressing glaucoma in their 2019 vision report. According to the statistics provided, more than 285 million people are visually impaired globally, and 39 million individuals are living with blindness. (3-4) Glaucoma is the second leading cause of irreversible blindness in both developed and developing countries. (3-4) In 2010, it was estimated that 60.5 million individuals had either Open Angle Glaucoma (OAG) or Angle Closure Glaucoma (ACG).

By 2020, this number was projected to increase to 79.6 million individuals. Additionally, the prevalence of bilateral blindness due to glaucoma was estimated at 4.5 million individuals with OAG and 3.9 million individuals with ACG in 2010. It was expected that by 2020, these numbers would rise to 5.9 million individuals with OAG and 5.3 million individuals with ACG.

(5) Globally, these statistics highlight the significant burden of glaucoma on the healthcare delivery system and emphasize the need for effective prevention, early detection, and management strategies to reduce the impact of this disease.

As reported by the Egyptian Society for Glaucoma Disease; Amin, Kamel, & El-Ashkar, (2020); Khalaf, Qayed, Fahmy, Wasfi, & Mohamed, (2015) the incidence of glaucoma in Egypt is about 0.5% to 1% of the total population.(6-7) In Qatar, the incidence was 1.73%, and in China and Southeast Asia had a prevalence ranged between 2.38% and 2.66%, and in Latin America, the prevalence of patients with glaucoma was projected at 3.35%, followed by Oman 4.75% and Africa 4.32%, about 11% of glaucoma patients in Saudi Arabia end up with bilateral blindness, (8-11) In 2020, women accounted for 59.1% of all people with glaucoma globally. This higher prevalence among women is attributed to both a higher overall prevalence and greater longevity. Among the types of glaucoma, women made up 55.4% of open-angle glaucoma (OAG) cases and 69.5% of angle-closure glaucoma (ACG) cases. Additionally, more than 51.5% of the global population over the age of 40 with glaucoma were females compared to males. Several research studies in the USA have shown that by the age of 69, approximately 6% of black Americans have glaucoma. The risk of glaucoma rises to almost 12% after the age of 80. (10,12,13)

According to the National Eye Institute, (2015); Mantravadi & Vadhar, (2015); Vin, Schneider, Muir, & Rosdahl, (2015) reported that glaucoma is a chronic eye disease that is often referred to as the "silent thief of sight" because it typically leads to a gradual loss of vision over an extended period. (14-16) In the context of glaucoma management, it is important to emphasize medication adherence behavior (MAB). MAB refers to the extent to which patients comply with or adhere to their prescribed medications as directed by healthcare professionals. Medication adherence is crucial because it can help prevent or slow down the progression of ocular damage, thereby reducing the risk of blindness among patients with glaucoma. (16-18) The research studies conducted by Mahmoodi, Jalalizad, Shaghaghi, Shooshtari, Jafarabadi, & Allahverdipour (2019), Lee, Jiang, Dowdy, Hong, & Ory (2018), Patton, Cadogan, Ryan, Francis, Gormley, Passmore, Kerse, & Hughes (2018), and Patton, Hughes, Cadogan, & Ryan (2017) have provided valuable insights into medication adherence behavior among older adults. According to these studies, approximately 40-72% of older adults exhibit non-adherence to medications, which is higher compared to other age groups. (19-22)

Furthermore, the studies highlighted specific issues related to medication adherence in older adults. For instance, one study reported that 18% of elderly patients missed their eye drop medication, while 65% of these patients contaminated the eye drop bottle by touching it to their eyes. (22) This proposes a need for improved adherence practices and education among older adults using eye drop medications. Additionally, other studies revealed that 20% of patients reported not receiving proper instructions on how to use their glaucoma medication, and approximately 50% of patients discontinued their glaucoma medication within six months. (23-25) These findings emphasize the importance of effective education and support to enhance medication adherence among older adults with glaucoma. Overall, the research studies indicate that medication non-adherence is a prevalent issue among older adults, particularly concerning eye drops and glaucoma medications. Addressing this health problem requires targeted interventions and improved patient education to promote proper medication use and enhance adherence rates among older adults.

Improving medication adherence among older adults with glaucoma through the application of the principles of self-efficacy theory plays a significant role in changing the individual's

behavior and cognitive processes which enhance one's confidence in their ability to carry out a particular task in a successful approach. Medication adherence refers to the extent to which individuals take their prescribed medications as instructed by their healthcare providers. Non-adherence to medication can have negative consequences, particularly among elderly patients, including increased healthcare costs, re-hospitalization, higher rates of comorbidity, delayed recovery, and increased mortality rates. (26-30)

METHOD

Self-efficacy, as defined by Bandura's social cognitive theory, is considered a crucial construct to enhance the self-confidence of elderly patients in overcoming barriers related to medication adherence. By focusing on self-efficacy, to increase patients' belief in their ability to correctly administer medication and evaluate the expected outcomes. Lopez-Garrido (2020), Conner (2010), and Bandura (2001) are cited as references for their contributions to the understanding and application of self-efficacy within the context of social cognitive theory. This article review likely provides insights into the theoretical foundations and practical implications of self-efficacy concerning medication adherence and the elderly population. (31-33) Additionally, Lopez-Garrido, (2020); Conner, (2010); and Bandura's theory, (2001) stated that self-efficacy is one of the key constructs in the social cognitive theory applied in the current study to improve the self-confidence of elderly patients for overcoming medication adherence barriers; and increase self-efficacy in carrying the medication correctly and evaluate the outcome expectations. (31-33)

RESULTS AND DISCUSSION

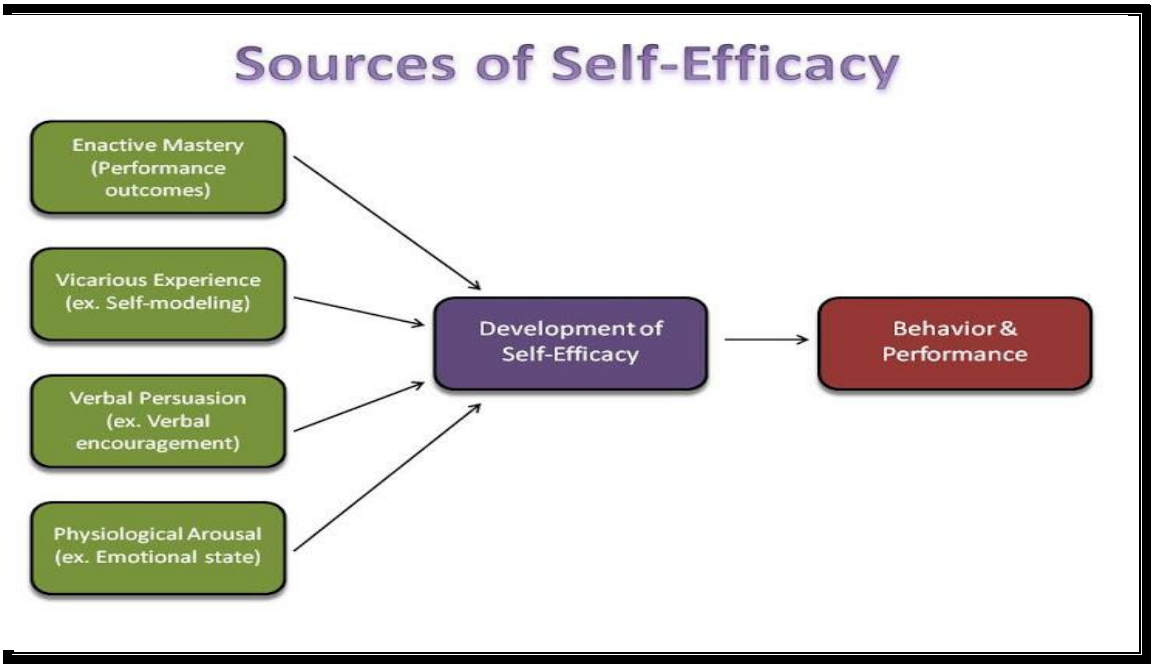
As proposed by Bandura's theory, (2001) elaborated that an individual's behavior is affected by two factors: firstly, self-efficacy i.e., an individual's feelings and thoughts towards his/ her ability to achieve a specific task or activity which measures the current study through the glaucoma medication self-efficacy scale. [(33)] In addition, the effort that will be spent to carry out the task which is measured through self-efficacy in carrying out specific tasks subscale, and how long he/she will persist to engage in this task when confronted with barriers which are measured through self-efficacy in overcoming barriers subscale. [(30)] Therefore, those subscales reflected self-efficacy where the elderly participants' confidence in the ability to complete a task or achieve a goal. Secondly, the outcome expectancy i.e., an individual's feelings and thoughts to have good behavior after the effective intervention that improves their self-efficacy. [(30)] According to Lopez-Garrido,(2020); Conner,(2010); Bandura's theory, (2001) states that individuals who perceive high self-efficacy are more active and persistent in accomplishing tasks compared to those who do not perceive self-efficacy. [(31-33)] Based on Redmond, (2010); Bandura, (1977) declared that the development of self-efficacy is gained through four sources of self-efficacy beliefs for sustaining an individual's behavior and performance to medication adherence. [(34-35)] These self-efficacy sources are comprised:

(1) Enactive Mastery: refers to individuals' personal experiences of successfully performing a task or achieving a certain goal. When individuals accomplish a new task well and succeed, this experience can contribute to the development of high levels of self-efficacy and self-confidence. This increased self-efficacy and self-confidence are associated with similar tasks, and individuals with higher levels of self-efficacy are more likely to engage in and persist with tasks they perceive as challenging. On the other hand, individuals with low levels of self-efficacy for a certain task may avoid performing it, which prevents them from gaining positive experiences that could potentially build their self-confidence.

(2) Vicarious Experience: involves observing other people successfully performing a task and gaining confidence from their achievements. People can develop high levels of self-efficacy by watching others, either in person or through various media channels such as YouTube or medical resources like brochures. For example, individuals may watch videos demonstrating the right technique for eye drop treatment and gain confidence in their ability to perform the task correctly by observing others' successful experiences.

(3) Verbal Persuasion: implies the reassurance and support given to an individual regarding their capabilities to accomplish a new task. When someone receives positive feedback, encouragement, or reinforcement from others, it can enhance their belief in their abilities, thereby increasing their self-efficacy. For example, if a healthcare professional provides clear instructions, emphasizes the importance of medication adherence, and expresses confidence in the individual's ability to follow the prescribed regimen, it can boost their self-efficacy in adhering to the medication.

(**4) Physiological Arousal:** indicates the activation of the body's physiological responses, including emotional states. Positive emotions tend to generate a greater sense of self-efficacy compared to negative emotions. When individuals experience positive emotions such as happiness, joy, or excitement, they are more likely to feel confident in their abilities to perform a task successfully. On the other hand, negative emotions like fear, anxiety, or stress can undermine self-efficacy by increasing doubts and inhibiting one's belief in their capacity to achieve a desired outcome. Therefore, managing and reducing negative emotions is important in maintaining or enhancing self-efficacy. [34,35]



On the other hand, the self-efficacy theory refers to an individual's belief in their ability to succeed in specific situations or accomplish tasks, which can have various effects on thought patterns and responses, these effects are included: [36-42]

(1). Choices (approach versus avoid): Individuals with low self-efficacy tend to avoid tasks because they perceive them as more difficult than they believe they can handle. They may doubt their abilities and fear failure, leading them to avoid taking on challenging tasks. On the other hand, individuals with high self-efficacy are more likely to approach tasks with confidence and perceive them as manageable. They believe in their competence to complete tasks successfully.

(2). Motivation: Individuals with high self-efficacy are more motivated to put in effort and persist in their endeavors to achieve their goals. They have a belief in their ability to succeed, which drives their motivation to work hard and persevere. In contrast, individuals with low self-efficacy may develop beliefs that they lack the necessary effort and feel helpless in achieving their tasks successfully. This can lead to decreased motivation and a tendency to give up easily.

(3). Work-related performance: Self-efficacy is strongly linked to work performance. When individuals have high self-efficacy, they are more likely to believe in their capabilities to perform tasks effectively. On the other hand, low self-efficacy can lead to reduced confidence and hinder performance, especially for complex tasks that individuals perceive as beyond their abilities. The difficulty of a task can influence an individual's self-confidence. If a task is complex, individuals may have low self-confidence because they perceive it as challenging and beyond their capabilities. Conversely, for simpler tasks, individuals tend to have higher self-confidence because they believe they can perform them successfully. In the context of healthcare, accurate task descriptions are crucial, particularly for tasks like medication intake. Providing accurate information about tasks helps patients understand their importance in supporting their health conditions and increases their adherence to the prescribed medication regimen.

(4). Thought patterns and responses: Individuals with low self-efficacy may perceive tasks as more challenging than they are. This can lead to weak task planning, increased exposure to stressors, and a greater likelihood of giving up. In contrast, individuals with high self-efficacy tend to approach tasks with confidence, develop effective plans, and take action to accomplish them. Overall, self-efficacy plays a significant role in individuals' confidence, motivation, task planning, and perseverance in the face of challenges.

In other words, Bandura, (2001), Kardas, Lewek, Matyjaszczyk (2013); Vrijens, Antoniou, Burnier, de la Sierra, Volpe (2017); Patton, Ryan, and Hughes (2020) who originally proposed the concept of self-efficacy is considered one of the main influential patient-related factors. Self-efficacy refers to an individual's belief in their ability to manage and perform specific health-related behaviors. If self-efficacy is not properly addressed, it can lead to deterioration of the patient's health condition or delay in recovery from chronic illness.[33,43-45] According to Navarra, Gwadz, Bakken, Whittemore, Cleland, and Melkus (2019); and Lubloy (2014), stated that nurses play a crucial role in the healthcare system by bridging the gap between theory and practice. They can apply the self-efficacy theory to promote adherence to medication behavior among older adult patients with glaucoma. The application of self-efficacy theory by nurses has a significant influence on the effectiveness of treatment and patient outcomes.[46,47] Due to the silent thief of sight, slowly progressive, and irreversible nature of the vision loss that occurs with glaucoma, the nursing interventions are required to focus upon: [13-15]

(1). Silent nature of glaucoma: Glaucoma is described as a "silent thief of sight" due to its slowly progressive and irreversible nature. This highlights the need for proactive nursing interventions to detect and prevent disease progression.

(2). Early detection and prevention: It refers to the nursing interventions that prioritize early detection of glaucoma to initiate timely treatment and prevent further vision loss. This may involve regular screenings, patient education, and raising awareness about the condition.

(3). Strict control of intraocular pressure: One key nursing intervention is to ensure strict control of intraocular pressure. This can be achieved through proper instructions on the correct technique for administering prescribed anti-glaucoma medication. By providing clear

instructions and guidance, nurses can increase patients' self-confidence in carrying out this specific task.

(4). Overcoming medication adherence barriers: Another important aspect of nursing interventions is addressing medication adherence barriers. Nurses can educate patients about the importance of medication adherence and provide strategies to overcome barriers such as forgetfulness or side effects. By empowering patients and increasing their self-efficacy, nurses can positively influence patient behavior and improve health outcomes related to medication adherence. [40-42]

CONCLUSION

Nurses as healthcare professionals play a crucial role in supporting older adults with glaucoma in their medication adherence journey using self-efficacy theory as a guiding framework, minimizing the risk of progression, and preventing further vision loss.

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