

IMPLICATIONS OF LOW HEALTH LITERACY ON THE HEALTH OUTCOMES OF PEOPLE LIVING WITH CHRONIC DISEASES: THE ROLE OF THE NURSES

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ABSTRACT

Introduction: Chronic diseases (CDs) are health issues that persist for at least a year, demanding continuous medical care. Health literacy (HL) is an important factor in disease prevention and control. Low health literacy. Low HL is a serious obstacle that hinder many people living with CDs from managing their chronic conditions.

Aim: To assess the implications of low health literacy (LHL) on the health outcomes of people living with chronic diseases (PLWCDs) and the role of the nurses.

Methods: Literature of articles published from 2014 to 2020 was searched across various databases, namely Pubmed, CINAHL, Google Scholar, ProQuest, Global Health, WHOLIS, Embase, and EbscoHost to assess the implications of LHL on health outcomes of chronic diseases. Literatures published in English language that met the inclusion criteria were included in the article.

Result: Some of the implications of LHL identified are: difficulties in navigating the health system, accessing and understanding information, communicating with healthcare providers, self-management, keeping appointments and medication adherence.

Conclusion: Considering the implications of LHL on health outcomes, it is imperative for nurses to be able to recognize people with LHL, understand the impact of LHL on PLWCDs, and be able to help them improve their HL. The review suggests some strategies for the nurses.

Keywords: Health Literacy; Health-outcome; People living with chronic diseases; self-management

INTRODUCTION

Chronic diseases (CD) also known as non-communicable diseases are medical conditions caused by genetic, lifestyle, physiological and environmental factors (World Health Organization (WHO), 2023). CDs are long-lasting conditions that cannot be cured but most times can be managed (WHO, 2023); they result in severe economic burden to individuals, families, and the society and often decrease health-related quality of life (Lan et al., 2018; Virella Pérez et al., 2019). CDs may limit an individual's ability to carry out activities of daily living, and therefore require continuous medical and self-care management (Centers for Disease & Control, 2022; Johnsson et al., 2023). CDs include hypertension, diabetes mellitus, heart diseases, asthma, arthritis and cancers. It affects the physical, mental, and social well-being of the affected person, thereby significantly disrupting their quality of life (Van Wilder et al., 2021; van der Gaag et al., 2017). Moreover, CDs are the highest causes of death and disability worldwide and has become a global concern (Dattani et al., (2023). In view of its prevalence and impact on people's health, CDs have emerged as a serious public health concern. Diabetes mellitus, heart disease, chronic respiratory diseases, stroke, arthritis, cancers and all other chronic diseases are responsible for more than two-third of all death causes worldwide (Gordon Singh & Aiken, 2017; WHO, 2023). Most of these deaths occur in low- and middle-income nations (Anderson & Durstine, 2019; Physiopedia, 2023). The changes that occur in people's lifestyle account for the increase in the prevalence of chronic diseases (Centers for Disease Control and Prevention. (2022), there is also a growing prevalence

of CDs in sub-Saharan Africa due to demographic changes (Gouda et al., 2019). According to the WHO, non-communicable diseases (NCDs) accounted for 29% of all deaths in Nigeria in 2016 (Okoro & Jumbo, 2021). Faronbi et al., (2020) found that 51.5% of their study participants reported having at least one chronic illness that had lasted for 1-5 years.

An important aspect of CDs management is self-management approach. This approach lay emphasis on individuals' personal duty in managing their own health (Hyso, 2021). Self-management among people with CD is therefore crucial for prevention of complications and promotion of quality life. People with chronic diseases require adequate knowledge and skills for effective self-management (Kuyinu et al., 2020). Previous studies have reported significant association of health literacy with knowledge, and self-management among diabetic patients (Vandenbosch et al., 2018).

Health literacy (HL), as defined by Mohd Isa et al. (2021), WHO (2023) and Shikha et al. (2023), encompasses the ability to access, understand, appraise, and utilize health-related information in various contexts such as healthcare, disease prevention, and health promotion for better health outcomes. It is the "personal knowledge and competencies which enable people to access, understand, appraise, and use information and services in ways which promote and maintain good health and wellbeing for themselves and those around them" (Nutbeam & Muscat, 2021; Shahid et al., 2022; Shikha et al., 2023). Individuals with appropriate HL have the ability to understand written information, communicate effectively with healthcare providers, make informed health decisions (Du et al., 2018). The concept of HL composes of an ability to continue to preserve health through self-management and collaborating with health professionals as partners (C. Liu et al., 2020a). HL is considered low when individuals lack the knowledge, skills and motivation. People with CDs often have low HL (Liu et al., 2023; Wieczorek et al., 2023), while low HL is a serious obstacle that hinder many people living with CDs from managing their chronic conditions (Son et al., 2018). Adequate HL is essential for people living with CDs to effectively use health-related information in the context of their condition on a daily basis (Larsen et al., 2022). Adequate health literacy enhances self-care behaviors (Matsuoka et al., 2016; Ong-Artborirak et al., 2023).

Health literacy (HL) levels of individuals determine their health outcomes. Health outcomes refers to consequences of chronic conditions despite care or interventions (Oleske & Islam, 2019). Health outcomes may be a measure of chance of recovery, quality of life or health status. The characteristics of poor health outcomes includes poor health related quality of life, morbidity or mortality. Previous studies have reported association of low HL with poor health outcomes (C. Liu et al., 2020b; Ann-Marie Lynch & Vinceroy Franklin, 2019). Low HL is a significant problem in many nations; and is often higher among those living in poverty, people with low educational level and people with poor socio-economic status (Gibney et al., 2020; MacLeod et al., 2017).

Nurses interact with clients in all settings of care and has the greatest responsibility to improve the HL of people living with CD in order to achieve good health outcomes. Lots of studies have been conducted on health literacy among people living with CDs and the impact of low HL on their health outcomes, especially in developed countries. There is, however, limited literature on studies on health literacy and the roles of nurses in developing countries despite the increasing number of cases of people living with chronic diseases in this region. This dearth of literature and the increase in poorer health outcomes of these patients is the gap this article intends to fill. The purpose of this review is to illuminate the health challenges of people living with CDs, explain the implications

of low HL on the health outcomes of people living with CDs, and outline the roles of the nurses in reducing the impact of low HL on the health outcomes of people living with CDs.

METHODOLOGY

Design

This article is a literature review to illuminate the health challenges of people living with CDs, explain the implications of low HL on the health outcomes of people living with CDs, and outline the role of the nurses in reducing the impact of low HL on the health outcomes of people living with CDs.

Data Extraction

Searches were conducted across various databases, namely Pubmed, CINAHL, Google Scholar, ProQuest, Global Health, WHOLIS, Embase, and EbscoHost, using terms for search in Table 1, as adapted from (Akinwale et al., 2022). Manual searches within reference lists and specific journals were done to supplement the electronic searches. The extracted data was subject to a cross-validation process by a second reviewer to rectify any inconsistencies.

Table 1: Terms used for search

Concept 1	Concept 2	Concept 3
Health literacy OR Low health literacy	Chronic diseases OR Chronic illnesses + Self-management	Low health literacy + Health outcomes + Role of the nurses

Inclusion Criteria

Literature Review from 2014 to 2023 and published in English language and assess the implications of low health literacy on health outcomes, CDs self-management, and the role of nurses were included in the review.

Exclusion criteria

Literature Review that was published before 2014 and not published in English language were excluded in the study.

Data Screening

Study citations were imported into reference management software, specifically Endnote. Data screening was done to remove duplicates, and the relevance of titles and abstracts was identified. The full text of potentially relevant articles was then retrieved and assessed against inclusion and exclusion criteria. All the articles that met the eligibility criteria were evaluated based on the indicators adapted from Akinwale et al. (2022) in Table 2 to ensure the appropriateness of the studies.

Table 2: Indicators for further inclusion

S/N	Indications
1	Are the aims and research questions well stated?
2.	Is the research methodology and design appropriate?
3.	Can the research design be justified?
4.	Is there consideration for ethical issues?
5.	Is the sampling strategy appropriate to address the aim and objectives of the study?
6.	Are the data collection techniques suitable, and are they explained clearly?
7.	Is data analysis and its description comprehensive and rigorous?
8.	Is there a clear and concise discussion of results and findings?
9.	Can the results of the research be applied to a broader population?
10.	Are the findings important to policy and practice?

Data Extraction

Data was inputted into a Microsoft Excel spreadsheet. Subsequently, the extracted data was subject to a cross-validation process by a second reviewer to rectify any inconsistencies. A uniform extraction tool was employed across all studies.

RESULTS AND DISCUSSIONS

This literature review revealed some implications of LHL on the health outcomes of PLWCDs. The themes that emerged are as follows:

Navigating the health system

Health literacy includes the ability of the patient to navigate the health system (Allen-Meares et al., 2020; Stormacq et al, 2020). Due to the long-term nature of chronic diseases, people living with chronic diseases require constant visits to hospitals to engage in interactions with health professionals for monitoring. In many health institutions, the healthcare systems are complex and confusing for patients to navigate; this is due to the increase expansion and specialization of the system over time (Griese et al., 2020; Hussey et al., 2021). Identifying the right entry point, finding their way through the system, and identifying the right place for meeting their health needs may be very challenging (Griese et al., 2020). Individuals with low health literacy may find this stressful and futile, and might result in discontinuation in further health care (Griese et al., 2020; van der Gaag et al., 2017).

Accessing and understanding of information

Individuals living with chronic diseases require access to reliable health information to engage in self-care and make informed choices. Access to reliable information is crucial because there is an increased demand for their knowledge for making decisions daily (Gille et al., 2021; (Griese, 2022). Gille et al. (2021) reported that more than half of the people living with chronic illness for about 6–10 years have difficulty in finding suitable information, while the majority reported having challenges in evaluating health information they find. People with inadequate or low HL may not wholly understand health information irrespective of their educational status and may not

be able to filter incorrect or unnecessary information from different sources (Rahmawati et al., 2021), and this may lead to misunderstanding of their health condition; resulting in poor self-management (Matsuoka et al., 2016).

Communication with healthcare providers

Research indicates that individuals with chronic illnesses encounter unique obstacles in comprehending health-related information, however, they also heavily depend on adequate HL because of the intricate and enduring nature of their ailments (Huygens et al., 2016; Schaeffer et al., 2023). Based on their encounters with patients, nurses reported that patients with LHL have difficulty in communicating effectively with healthcare providers, and in taking responsibility for personal health (Stormacq et al., 2020). People with LHL do not adhere to health instructions, ask the health care provider same question many times because of lack of understanding (Murugesu et al., 2022). Patients do not only receive information from health professionals, but also give information and those with low health literacy may state their symptoms incorrectly, avoids conversation or provide little answers to questions when asked (Murugesu et al., 2022). Nurses require appropriate knowledge, skills, and attitude to effectively provide health information and health services to patients with low health literacy. Previous studies have reported that only few nurses use effective communication techniques when addressing client with low health literacy (Nantsupawat et al., 2020; Yang, 2022).

Self-Management

CDs often progress slowly and may last for many years; self-management is an important strategy in the management of people living with CDs. Gauthier-Beaupré et al. (2023) and Zwane et al. (2023) reported self-management as a key public health action to achieve good health outcomes among people living with CDs. Self-management is an approach that allows people living with chronic diseases to take a key role or take charge of their care in collaboration with nurses (Beck et al., 2017; Virella Pérez et al., 2019; Zwane et al., 2023; Vainauskienė & Vaitkienė, 2021). It includes taking up many new practices, engaging in healthy eating, physical exercise, stress management, adherence to medication, follow-up with health workers and emotional management (Zwane et al., 2023). However, engaging in these new practices may be difficult for people with low health literacy because such activities or practices may be hard to understand, difficult to engage in or unacceptable to them as they may see it as an intrusion into their everyday life. Even though each CD is unique, but generally, people living with CDs have common challenges in relations to the management of their chronic conditions. Such challenges include: adjusting to new lifestyles (diet/nutrition modifications, physical exercise and stress management) (Edemekong & Huang, 2023), managing their symptoms and disability, keeping track of physical indicators, managing complex treatment regimen and maintaining a relationship that produces desired effect with health care workers (Brunner-La Rocca et al., 2015; (Grady & Gough, 2014). Poor self-management knowledge and skills have been associated with low health literacy among people living with CDs (Almigal et al., 2019).

Keeping Appointments

Marbough et al. (2020) found that some patients declined to attend appointments, while a small number arrived late for their scheduled appointments. The study revealed a wide range of no-show

rates, varying from 12% to 80%, across different healthcare settings (Marbough et al., 2020). These no-show occurrences result in wasted time slots and resources in healthcare facilities, which can have a detrimental impact on the efficient use of space and human resources (Dantas et al., 2018). Moreover, these no-shows may lead to delays in diagnosis or treatment, potentially affecting the health outcomes of the patients (Marbough et al., 2020).

Medication adherence

People living with CDs are often on life-long medications as a measure of treatment of symptoms and to prevent complications. Most times, patients do not enjoy the advantages of the medication because of poor use (Alosaimi et al., 2022). Clinical studies have shown evidence of higher level of medication adherence among patients with acute cases when compared with patients suffering from CDs (Alosaimi et al., 2022; Lam & Fresco, 2015). People with CDs, such as hypertension and diabetes mellitus experience highest level of non-adherence to medication (Shimels et al., 2021). Some of the patients do not adhere because they forgot while others said, they didn't adhere because they feel the medication they are using are too many and sometimes, they don't understand the instruction for use (Alosaimi et al., 2022). These are evidences of lack of knowledge of importance of medication and low health literacy. Lack of adherence may lead to complications such as heart attacks, heart failure, strokes, and kidney disease in people living with hypertension (Gikunda & Gitonga, 2019), or hyperglycemic coma in people living with diabetes mellitus (Sendekie et al., 2022). Poor adherence to medication results in worsening of the chronic condition, increased morbidity and mortality and considerable increase in health care costs (Schultz, 2023).

Impact of low health literacy on health outcomes of people living with chronic diseases

Generally, low HL has been linked with increase rates of emergency room use (Shahid et al., 2022), poor adherence to therapy among patients with CDs, increased number of hospitalizations and higher number of days spent (Mahmoodi et al., 2019), inability to access health services, lack of understanding of oral and written health related information, inability to communicate with health professionals (Epion Health, 2022; The Economic Intelligence Unit Limited, 2021), inability to fill medical forms (Rowlands et al., 2015; CDC, 2022; Holden et al., 2021), poor ability to remember information after hospital visits services (Shahid et al., 2022), and increased death (Fan et al., 2021). People living with CDs due to low HL has wrongly embarked on emergency services (Murugesu et al., 2022) and demonstrate poor health promoting behaviors (Magnani et al., 2018). These outcomes result in higher morbidity and mortality along with increased medical costs (Coughlin et al., 2020). According to Kuyinu et al., (2020), people living with CDs require adequate HL skills to take control of their illness state and also the side effects of the disease. Studies reported association of low HL with stroke, retinopathy, ischemic heart diseases, lower limb amputation and poor glycemic control among diabetes patients (Olesen et al., 2021). People living with CDs with low HL are at higher risk of disability and untimely death due to poor self-management. Holden et al. (2021) reported association between low HL and difficulty in understanding and processing information that are related to cancer and had poorer health related quality of life including positive association with mental distress, among patients with cancer of lungs, prostate, breast, colorectal, head and neck. Also, Low HL was linked with frequent emergency department visits, hospitalization and increase unadjusted risk for mortality among patients with heart failure (Fabbri et al., 2020; Kanejima et al., 2022). Studies among people living with Asthma showed association of low HL and poor longitudinal asthma outcomes (Myers &

Murray, 2019). Furthermore, inadequate HL was also linked with worse physical function, poor quality of life and increased use of emergency services for asthma (Myers & Murray, 2019).

The role of the nurses

The concept of health literacy has been existing for a long time, but has emerged as a recent inclusion in the field of nursing profession (Wilandika et al., 2023). It is recognized as a pathway toward promoting better health. CD prevention, treatment and management is acknowledged as both clinical and public health matter (Stormacq et al., 2020). Nurses has major roles to perform in both clinical and public health settings (Wilandika et al., 2023). Such roles include ability to recognize people with low HL and appreciate the direct effect of low HL on the health outcomes of people living with CDs. Engage in effective communication and provide appropriate information to make informed decisions on health issues in order to achieve good health outcomes such as the absence of disability, good health status, and quality of life. Nurses need to grasp the concept of health literacy, and recognize its impact on individuals' health attitudes and actions (Silva & Santos, 2021), so as to diminish information disparities in healthcare for patients (Sharma et al., 2019; Wilandika et al., 2023). Nurses can fulfill this educational function by assisting patients in comprehending the importance of adopting positive health practices and advocating for health literacy (Munangatare et al., 2022). As professionals, they require to enhance patient health and prioritize patient-centered care by delivering nursing interventions that facilitate literacy support. In order to improve self-management among people living with chronic diseases, self-management education and self-management support programs such as structured telephone support, mobile applications and tele-monitoring should be implemented by nurses (Samal et al., 2021). Self-management support programs are effective (Mai Ba et al., 2020).

Nurses should make appropriate medical information available in an easy-to-understand language and in a shame-free environment (CHESS Health Solutions, 2022). Health information and communication materials should be adapted to meet the health literacy level of the patients (Hogan et al., 2023). A brief health literacy screening is recommended, like Brief Health Literacy Screen (Boyle et al., 2017). Strategies that nurses can use to improve their oral communications with people with low health literacy includes the use of Universal Precaution Approach (assumption that every individual may have difficulty understanding health information), plain and simple language and avoidance of medical terminologies, speak slowly, presenting fewer statements of information, repeating and summarizing information and application of the teach-back method (Chang et al., 2023); Creating a welcoming environment in order to encourage the patient to communicate their concerns freely with the nurses, as one prevalent obstacle to sustaining adequate health literacy is a lack of trust, and patients feeling hesitant to discuss health issues with nursing professionals due to various reasons (INSCOL, 2022).

Health information that are complex should be broken down to bits (Murugesu et al., 2022). Written information should be given to complement oral information. Information on diet, explanation on medication adherence, interpretation of food labels must be clear and concise and presented in low reading level (Allen-Meares et al., 2020; Nantsupawat et al., 2020). The use of visual aids in form of pictures, diagram, tables, simple illustration, videos, and informational graphics may enhance better understanding of information (Nantsupawat et al., 2020). People's culture must be considered in selection of visuals. Special attention should be given to people who are not from English speaking communities while cultural barriers such as beliefs, customs and

traditions should also be considered. Health care providers should also help patients to fill medical forms where necessary while forms should be provided in different languages (Murugesu et al., 2022). Healthcare providers may use a "Teach-back" and "Show back" method when giving instruction or demonstrating how to carry out a task or use a device (Mekhail et al., 2023; (Agency for Healthcare Research and Quality (AHRQ), 2020) .

People living with CD should be supported to make and keep appointment by sending text messages or e-mail as reminders or form the habit of giving appointment slips to them. In addition, an easy to remember times should be scheduled; appointments can also be linked to everyday activity such as before the client start work (Murugesu et al., 2022). They should be assisted to navigate the system, provide clear information about practice (Rural Health Information hub (RHIfhub) Toolkit, 2020). A short video may help to explain hospital routes and practices.

Encourage the client to come along with a companion for consultation with health workers and encourage the patients to prepare their lists of questions ahead before appointment date. To improve health communication, clients should be encouraged to ask three questions each time they visit the health care providers, this is called the "Ask 3 Questions approach" (Canberra Health Literacy, 2023).

In order to improve medication adherence, nurses should not rely only on verbal instruction, they should provide medication charts or medication calendar that will state what time and how the patient will take the medicine (Resnick, 2020.). Avoid complex medication regimen, use one daily dosing rather than multiple daily dosing where possible (Resnick, 2020). They should be encouraged to speak with their healthcare provider about improvement or otherwise in their condition before discontinuing their medications (Lohuis, 2023). Also provide follow-up and encourage medication adherence.

Nurses should be responsive to patients' expectations, ideas, and concerns. Exhibit posters in waiting rooms, about health issues which include low literacy. Motivate people living with CDs to engage in healthy lifestyle behavior

Conclusion

Chronic conditions are the highest causes of death and disability worldwide and has become a global concern, while health literacy is a crucial factor in chronic disease prevention and management. The health of patients with chronic diseases is not solely determined by their illness, but is also influenced by their literacy level, ability to manage their condition, and other psychological factors. Adequate information is therefore essential to improve their health literacy and self-efficacy. The health professionals on their part need to ensure that information, products, and services are accessible and comprehensible to the people living with chronic diseases. The patients/clients need to be able to understand and process medical information to make informed decisions about their healthcare. This may be achieved through clear communication, use of understandable language, repetition of important information, teach-back technique, and encouragement for patients to ask questions.

Implications to practice

If the nurses have a good knowledge of the concept of health literacy they will be able to recognize people with low health literacy, understand the impact of low health literacy on people living with CDs, and be able to help them improve their health literacy.

Recommendations

1. It is important to introduce health literacy to the training curricula of the nurses at an early stage to emphasize its significance in patient care.
2. Periodic workshops for nurse clinicians and nurse educators to educate them about health literacy and its impact on patient/client care and health outcomes.
3. Nurses must enhance their understanding of health literacy to improve the health outcomes of patients/clients.
4. Materials and tools to improve health literacy of clients should be made available while nurses should be trained in the correct use of such tools and materials.

Suggestion for further studies

The review suggests future study to evaluate the health literacy knowledge of the nurses.

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