Relation between Improving Health Literacy in Low Socioeconomic Status Individuals and Reducing Risk of Developing Cardiovascular Disease

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ABSTRACT:

Background

Cardiovascular diseases (CVD) are one of the main causes of mortality across the world. Among the risk factors associated with CVD is health literacy. The aim of this review is to synthesize information related to the association between health literacy and CVD and how improvements in health literacy can decrease CVD risk.

Methods

Utilizing search engines like Pubmed and Google scholar, this review synthesizes articles pertaining to cardiovascular diseases and health literacy using terms such as “socioeconomic status”, “literacy,” and “cardiovascular disease.” The review excludes articles in foreign languages, studies published prior to the year 2000, and literature reviews.

Results

This paper includes five studies revealing the large association between low health literacy and increased levels of CVD. Specifically, a negative correlation between adults in low income areas to information on CVD related risk factors has been identified. Furthermore, a positive relationship between providing health curriculums for children in low SES communities and their ability to better manage their health has been shown in the data.

Discussion

Given that low health literacy is associated with increased CVD risk, achieving health equity with CVD requires an emphasis on improving health literacy in underserved areas. In order to achieve health equity, curricula in elementary schools and the work force ensuring health literacy should be implemented in at-risk communities.

INTRODUCTION:

By 2020 cardiovascular disease (CVD) was projected to be the leading cause of mortality taking 73% of global deaths [1]. It is associated with risk factors such as diabetes, hypertension, obesity, and dyslipidemia, diseases considered commonalities of aging [2]. Furthermore, both the morbidity and mortality rate are more prominent in developing countries and low socioeconomic

status (SES) areas compared to their higher counterparts [1,3]. In addition, SES can serve as an inhibitor for the education of preventative health behaviors (PHBs) resulting in development of the aforementioned risk factors [4].

However, risk factors are reversible if combated with proper prevention techniques to achieve health equity, such as improving health literacy [5]. Health literacy is possessing the ability to properly understand and follow directions and recommendations given by healthcare professionals [6]. In this context it refers to individual knowledge and capability of making healthy choices [6]. SES refers to one's economic status in the context of their social situation [5]. This study aims to expose the disparity in health literacy in low SES areas in order to find methods to achieve health equity in cardiovascular issues.

Objectives

Many studies independently explore the relationship between SES and CVD and health literacy and CVD although studies comparing the impact of improving health literacy on CVD within low SES areas are scarce. This paper addresses how improving health literacy in low SES individuals reduces risk of developing cardiovascular disease.

METHODS:

This paper is a review exploring the impact of health literacy in low SES areas improving cardiovascular disease prevention. PubMed and Google Scholar were searched with key phrases including, “health literacy,” “cardiovascular disease," "socioeconomic disparity,” “heart health,” and “income disparity”. Studies referencing wealth disparity and its influence on health literacy were used. Furthermore, papers about improving health literacy and its effect on cardiovascular disease prevention were employed. Studies published before the year 2000 and literature review articles were excluded.

RESULTS:

Kino et al. focused on trends between SES and implementation of PHBs for hypertension, diabetes, and CVD [4]. The PHBs used in this study were not smoking, light or no alcohol consumption, healthy diet, regular exercise, and proper amounts of sleep [4]. It was found that 55%-90% of education based inequalities (EBI) could be reflected in one’s adherence to PHBs [4]. Specifically, the results show 89% of hypertension, 75% of diabetes, and 56% in cardiovascular diseases could be explained by EBI [7]. Interestingly, Wang et al. found that health literacy and self efficacy had a strong positive correlation to improving hypertension, a known warning sign for CVD [7]. In addition to improving overall health, the data presented a positive association between quality of life and health literacy [7].

Correspondingly, Macdonald’s study predominantly focused on the impact of an educational program detailing ways to preemptively improve cardiovascular health in eighth graders in

various educational environments, specifically rural and urban [8]. The experimental group was exposed to a program known as the cardiovascular health education program also known as CHEP, which involved a curriculum designed to improve heart health knowledge in adolescents [8]. In line with Kino et al, the CHEP benefitted those living in rural areas without access to health education, but this positive impact was not observed in those living in urban communities [8]. On the other hand, Muhihi et al. collected data from adults in Tanzania in order to determine the extent to which they are familiar with risk and warning signs of cardiovascular disease garnering a baseline of health literacy [9]. Overall, 52.4% of participants were unable to recognize even one risk factor or warning sign [9]. 11.8% were unable to recognize any warning signs [9]. As a whole, only 28.3% of participants reported healthcare providers being the source of their CVD knowledge [9]. Similar to Macdonald, when compared to a similar study conducted in Ulanga, an area with a higher education level, knowledge was significantly higher [9].

Furthermore, Lindahl et al. conducted a study with the intention of investigating how improving health literacy prevents onset of cardiovascular disease [10]. In the sample of adults with one or more risk factors of CVD, 20% of participants were categorized as having low health literacy [10]. In addition, health literacy was indicative of stronger carotid wall thickness whereas a relation between low health literacy and increased carotid artery plaques was also confirmed [10].

DISCUSSION:

The data suggests a strong association between bettering health literacy in undereducated communities and the lowering of risk for CVD. The results presented by Kino et al. illustrates the relationship between SES and health literacy, with lower literacy rates in lower SES communities [1]. When correlating health literacy and CVD, Lindahl et al. found health literacy was associated with a lower likelihood of developing CVD [5]. Together, these findings support the hypothesis that increased CVD in low SES areas may be partially explained by health literacy rates. This could potentially be explained by lack of adherence to medical advice because of lack of education. Furthermore, proper food intake and nutritional diets, a known PHB for CVD, might be unavailable or unknown to this without the availability of health knowledge [4].With this information, it is imperative to introduce educational programs in under-resourced areas in order to encourage healthy practices in undereducated youth. The clear association between health literacy and reduced CVD strongly urges for recommendations in improving health literacy to achieve health equity. Policy makers should aim to address this issue through school and work programs ensuring equal access to information pertaining to healthy living and in order to reduce CVD as a whole. For example, doctors should provide infographics in their offices predominantly consisting of pictures and text written at a low reading level. These practices can be strengthened through schools implementing healthy eating programs as part of the k-12 curriculum to ensure healthy habits early on.

One limitation of this review is its adherence to English only studies preventing a wider range of research from being utilized. Another limitation resides in the time period of research chosen - 2000 to 2025- which might be considered large in context of modern medicine.

In conclusion, CVD is a major global health issue, disproportionately affecting those in low income areas [4]. However, this can be heavily influenced by improving health literacy [8]. Adding education incentives or mandates in less affluent communities could bridge the gap between status and work towards achieving healthy equity.

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