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EDITORIAL

Evaluation of Self-assessment in Cardiovascular Diseases Among Korean Older Population

Cardiovascular diseases (CVDs) are the leading diseases in terms of morbidity and mortality in most developed and developing countries [1–3]. In accompaniment with a rapidly growing elderly population, Korea has been experiencing a sharp increase in CVDs. The prevalence of CVD risk factors such as hypertension (HTN), diabetes mellitus (DM), and hypercholesterolemia among adults (aged $\geq$ 30 years) has increased from 24.6%, 9.6%, and 10.7% in 2007, to 27.3%, 11.0%, and 14.9%, in 2013, respectively [4]. To prevent and manage the increasing burden of CVD risk factors, the Korean government implemented the National Cardio-Cerebrovascular Disease Plan 2010–2015 [5]; however, limited public information on CVD risk factors among patients with these chronic diseases has excluded many of these patients from the government's enrollment system [6].

The accuracy of self-reported CVD and its determinant factors are important in CVD prevention and management among older populations. Accurate information on the prevalence and trend of these diseases is essential in societal disease management and medication compliance. Self-reported health data through surveys are widely used for reasons of cost-effectiveness, but complex variations between subjective and objective measures of CVD risk factors hinder better understanding of the magnitude of CVD, its associated factors, and the effectiveness of government interventions for its prevention [7–10]. Several studies suggest that the prevalence of self-reported DM shows a relatively high level of agreement [11–14], but high cholesterol revealed a significant discrepancy [9–11,15], with a mixed result for high blood pressure. A Minnesota study involving 2,037 participants aged $\geq$ 45 years suggests that agreement between reported and medical records was noticeable for both DM and HTN (k = 0.71–0.80) [12]. In comparison to the American research, several European findings suggest similar agreement for DM (k = 0.84–0.76), but a significantly lower agreement for HTN (k = 0.63–0.51) and hypercholesterolemia (k = 0.55–0.48) [9,11,13]. A recent European study encompassing 12 countries estimated that nearly 70% of European adults were unaware of having high cholesterol levels [11]. These results imply that undiagnosed cases of patients with chronic diseases could significantly deteriorate the quality of CVD primary care and intervention, when relying only on self-reported health data. However, there is a substantial knowledge gap in the accuracy of self-reported chronic diseases among older Asian adults. In addition, it is still unclear why this discrepancy in agreement exists for CVD risk factors, whereas emerging research shows that some socio-demographic factors such as age, sex, and education can contribute to its accuracy [9].

In the current issue of *Osong Public Health and Research Perspectives*, an epidemiological research is enlisted in which the authors investigated the accuracy of self-reported HTN, DM, and hypercholesterolemia among older Korean adults. The aim of the study was to assess the following: whether older Korean adults have a higher accuracy of reporting CVD risk factors when compared with measured data; whether the extent to which the observed variation between the two measures differs in HTN, DM, and hypercholesterolemia; and whether the extent may be attributable to demographic factors, socioeconomic factors, and/or health behavioral factors. The study examined whether there are different determinant factors between DM, HTN, and hyperlipidemia. The authors utilized national data from the Fourth Korean National Health and Nutritional Examination Survey (KNHANES IV), 2007–2009. They selected 7,270 individuals aged $\geq$ 50 years who participated in both a health examination and a health interview survey. The self-reported prevalence of HTN, DM, and hypercholesterolemia was compared with measured data (arterial systolic/diastolic blood pressure, fasting glucose, and total cholesterol). They found that an agreement between self-reported and measured data was only moderate for hypercholesterolemia (k = 0.48), even though it was high for HTN (k = 0.72) and DM

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($k = 0.82$). Sensitivity was low in hypercholesterolemia (46.7%), but high in HTN and DM (73% and 79.3%, respectively). Multiple analyses showed that predictors for sensitivity differed by disease. People with less education were more likely to exhibit lower sensitivity to HTN and hypercholesterolemia, and people living in rural areas were less sensitive to DM and hypercholesterolemia. Caution is needed in interpreting the results of community studies using self-reported data on chronic diseases, especially hypercholesterolemia, among adults aged $\geq$ 50 years.

There are limitations in this study that they might exclude the possibility of an over- or underdiagnosis of directly measured data, as in white coat syndrome for HTN or DM, which has an anxiety-induced false positive reaction [15,16], and the sensitivity level of self-reported data may be decreased. Also, physician-related factors such as age or hospital setting were not controlled. The heterogeneity of disease criteria is limited to the results garnered from one country to another. Nevertheless, this study has a unique strength in that it is based on a nationwide, large-scale population and has a sampling scheme with a high response rate (74%), so that the result can be generalized to the Korean population as a whole. Moreover, this study's results provide diverse factors including sociodemographic and behavioral factors that influence awareness of CVD risk factors, which can be used in intervention programs for these diseases.

Conflicts of interest

The authors declare no conflicts of interest.

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