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Letter to the Editor

Reply on "Identification of people with high risk of osteoporosis in Asia"

We are thankful to Chong et al [1] for their interest in our study, and we appreciate the opportunity to respond to their comments. Chong et al generally has 2 questions: (1) whether COSA represents a significant advantage over widely utilized methods such as the Fracture Risk Assessment Tool (FRAX), and (2) whether the currently available algorithms are adequate already. The following is our reply to the questions collectively.

Our recent global hip fracture study showed that despite many countries and regions having a declined incidence of hip fracture over the recent years, the absolute number of hip fractures will double by 2050 [2]. Thus, a greater effort is required to reduce the burden of hip fracture.

One important way to reduce the burden of fracture is early diagnosis and prediction of fracture. Multiple fracture prediction algorithms are available, such as FRAX [3], Garvan [4], QFracture [5], etc. Among these, FRAX is the most used algorithm. As pointed out by Chong et al [1], there are over-estimation and under-estimation issues associated with Garvan and FRAX. Indeed, these issues could be population-specific. Our previous study evaluated the performance of FRAX in the Hong Kong population and found that FRAX performance was not better than conventional clinical risk factors [6]. Predictors of FRAX were originally identified based on mainly the Caucasian cohorts [3], despite the estimates were eventually calibrated using the local population data. For example, the estimates used in the Hong Kong FRAX score were calibrated using the data from the Hong Kong Osteoporosis Study [7]. Some predictors included in the FRAX calculation may be less useful in predicting fracture in different populations. Inclusion of these predictors in the model could increase the noise instead of accuracy. For example, smokers and drinkers in the female population in Hong Kong are not as prevalent as in the Caucasian population. This is the basis for why developing a population-specific risk score is important. For example, QFracture was developed based on the QResearch database in the UK [5], which is highly generalizable to the UK population. The Scottish Intercollegiate Guidelines Network guideline prefers QFracture over FRAX in predicting fractures [8]. Thus, our team has developed multiple osteoporosis prediction tools [9–11] based on the data from the Hong Kong population, either from the Hong Kong Osteoporosis Study [7], which is a cohort study established since 1995, or the big data from the population-based electronic health records [9], and these tools are expected to be highly generalizable to the local population as well as to other Chinese population potentially.

The knowledge of osteoporosis management among primary care and resident physicians is poor, as reported in multiple countries and regions [12–15]. In Sweden, physicians even perceive osteoporosis as a low-priority issue [16]. Although FRAX could probably be well-perceived among physicians, it is rarely used clinically. Less than 20% of physicians used FRAX, as reported in the Korean [17] and Malaysian [18] studies. The lack of use of FRAX could be because they are too busy to perform a FRAX calculation [16,17]. In a qualitative analysis, physicians suggested that the patients should fill out FRAX before the visit [16]. COSA [11] is an osteoporosis prediction tool that consists of 3 questions, which is comparatively user-friendly than other major tools. In addition, COSA can predict not only osteoporosis risk, but also fracture risk [11]. The web tool of COSA is being developed. With the web tool, we aim to improve awareness and empower the self-care of osteoporosis among patients. At the same time, we will also hope that COSA, as a simple tool, can facilitate physicians to manage osteoporosis so as to reduce the burden of fractures.

Conflicts of interest

The author declares no competing interests.

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