Original Article :

Orthopedics Surgeons' Out-Patient Practice in Saudi Arabia: Supplementation and Osteoporosis Management

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Abstract

Background & Aims:

Orthopedics surgery is an increasingly specialized discipline. The orthopedic surgeon is required to advocate for and occasionally manage patients with osteoporosis and other medical conditions. This practice is not consistent, yet some surgeons liberally provide certain supplements that have not been proven to provide any clinically relevant effect.

Methods:

An electronic survey was designed to elaborate on the current trend in managing osteoporosis and the provision of supplements. It was distributed to the members of the Saudi Orthopedics association. The data were analyzed for association with practice setting and years of experience.

Results:

Fifty-one members completed the survey. Most (60%) were from the public sector and in their second decade of experience. Most participants would screen patients using bone density measurements (88%), but most would stop there and refer to a specialist (55%). Most would provide their patients with calcium (80%) and vitamin D (86%). When it comes to other supplements -multivitamins, Vitamin B complex, chondroitin, and glucosamine- most either rarely provide it or do not provide it at all.

Conclusion:

Orthopedic surgeons in Saudi Arabia are just as likely to screen patients for osteoporosis and start management as their counterparts in developed countries. The provision of some nutritional and other supplements remains prevalent even if its incidence is low..

Keywords:

Orthopedics, Nutritional supplements, Osteoporosis

Introduction:

With the increased specialization in the medical field, the specialist might lose sight of a significant issue facing his patient while focusing on his specialty's details[1]. The orthopedics surgeon's out-patient clinic is a busy environment, and thousands of patients pass through it annually[2]. Nevertheless, the orthopedic surgeon is perfectly positioned to screen patients for relevant medical conditions, notably osteoporosis. As part of a multi-disciplinary team, the orthopedic surgeon plays a vital role in this regard[3]. This role is not limited to osteoporosis screening, however. The orthopedic surgeon can suggest or prescribe a variety of nutritional and "health" supplements according to the patients' condition. Vitamins, calcium supplements, chondroitin & glucosamine are often prescribed. The evidence supporting these practices, however, is weak[4-6]. Calcium supplementation may cause harm, and multivitamin supplementation is no longer recommended for healthy adults[7, 8]. Our goal in this study was to investigate the current trends in osteoporosis management and the use of nutritional and other supplements by orthopedic surgeons in our country.

Materials and Methods:

A structured electronic survey was designed to answer the questions posed by the author. It was distributed to members of the Saudi Orthopedic Association (SOA) by email and social media. The participants were completely anonymous as no personal identifying data was collected. The participants consented to their anonymous information being used for research purposes electronically. The first section was concerned with the participant and his practice environment. This included the number of years in practice and whether the participant's practice institution was public or private. The second section inquired about the pattern of prescribing specific supplements by the participant. This included multivitamins, vitamin B complex, vitamin D3, calcium, and chondroitin/glucosamine. The third section inquired about the participant's current practice concerning osteoporosis management. The data was then coded and tabulated. Statistical analysis included descriptive statistics and the chi-square test using SPSS version 27(IBM, Armonk, NY, USA).

Results:

Fifty-one SOA members completed the survey. About their practice type, thirty-one participants (60.8%) practiced in a public institution, while only 20 participants (39.2%) worked in a private institution. Most participants were in practice for 11-20 years (21 participants, 41.2%), some

were in their first decade of practice (18 participants, 35.3%), and a few had more than 20 years of experience (12 participants, 23.5%).

When it comes to the provision of supplements, the variation in practice is shown in Figure 1. Apart from calcium and vitamin D, most participants did not prescribe supplements routinely. Multivitamins are rarely prescribed by most, but B complex vitamins showed wide variation in their prescription by the participants. Chondroitin and glucosamine had the largest percentage of participants who would not consider prescribing it under any circumstances (19 participants, 37.3%). There was

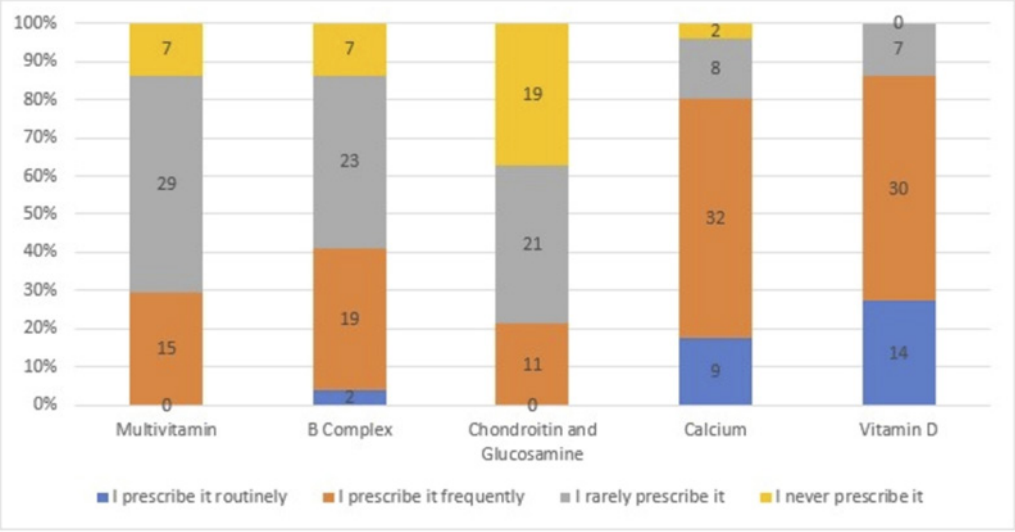


Figure 1: Prevalence of supplement provision by study participants.

no significant association between the type of practice and any supplements except for chondroitin and glucosamine. Chondroitin and glucosamine prescriptions were more prevalent in the private sector: Forty-five percent of participants from that sector would prescribe it frequently, and only 7% of public sector surgeons would do so (P=0.005). No significant association was found between supplement provision and experience (P=0.94).

When asked whether they would handle osteoporosis alone or involve others, most (28 participants, 54.9%) replied they would be happy screening only. They would then refer the positive cases to specialists (figure 2). Some would add initiation of treatment (14 participants, 27.5%), while a minority would manage the cases themselves and not involve others (7 participants, 13.7%). A significant association was found between the practice setting and osteoporosis screening preference: Public sector participants are more likely to screen and refer to experts (68%) than private-sector participants (35%). In comparison, 25% of pri-

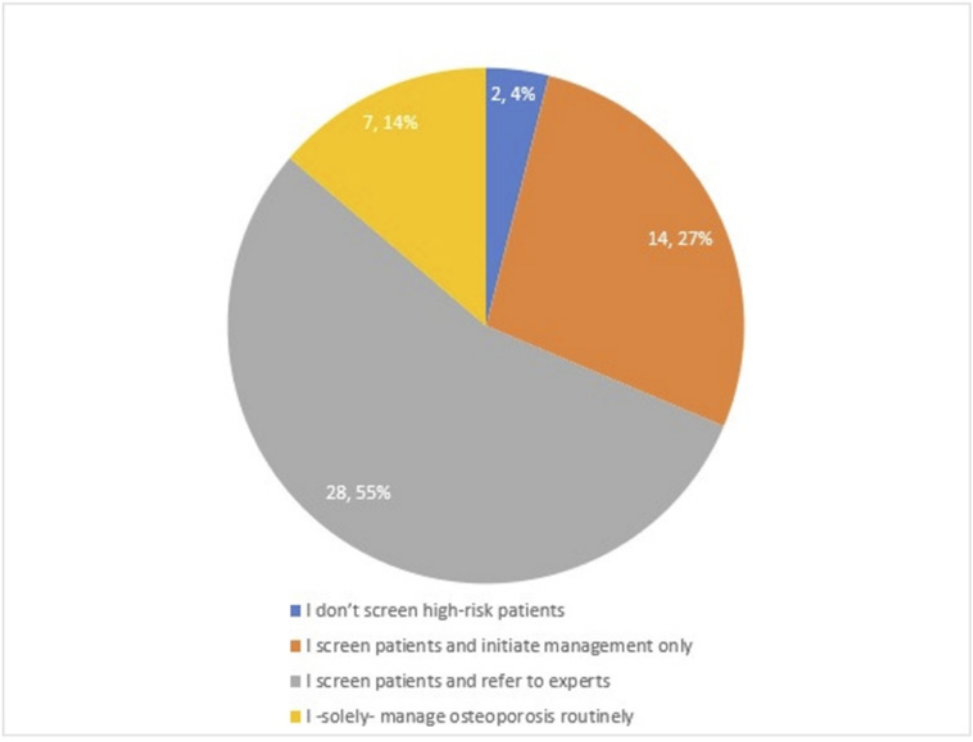


Figure 2: Preferred osteoporosis screening and referral by study participants.

vate-sector surgeons would solely manage osteoporosis, and only 7% of public sector surgeons would do so (P=0.035). No significant association was found between osteoporosis management and experience (P=0.34).

When asked about their current investigation(s) of choice when screening for osteoporosis, most replied that they would request dual-energy X-ray absorptiometry (DEXA) and follow established guidelines (figure 3). Some would request laboratory workup-such as a bone profile and screening for vitamin D deficiency (29 participants, 56.9%). A minority felt comfortable investigating for causes of secondary osteoporosis (9 participants, 17.6%).

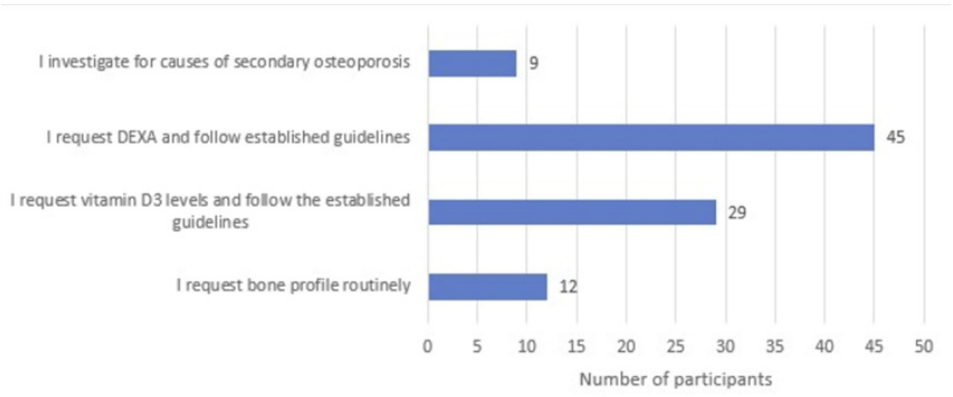


Figure 3: Osteoporosis screening investigation by study participants (any that applies).

When asked what their standard treatment for osteoporosis would be, the majority (21 participants, 41.2%) denied they would treat it (figure 4). The second-largest majority (15 participants, 29.4%) would prescribe supplements and other medications, while around one-fifth of the participants (11 participants, 21.6%) would add bisphosphonates. A small minority (four participants, 7.8%) would prescribe supplements only. No significant association was found between osteoporosis treatment and practice location or experience (P=0.277&P=0.428).

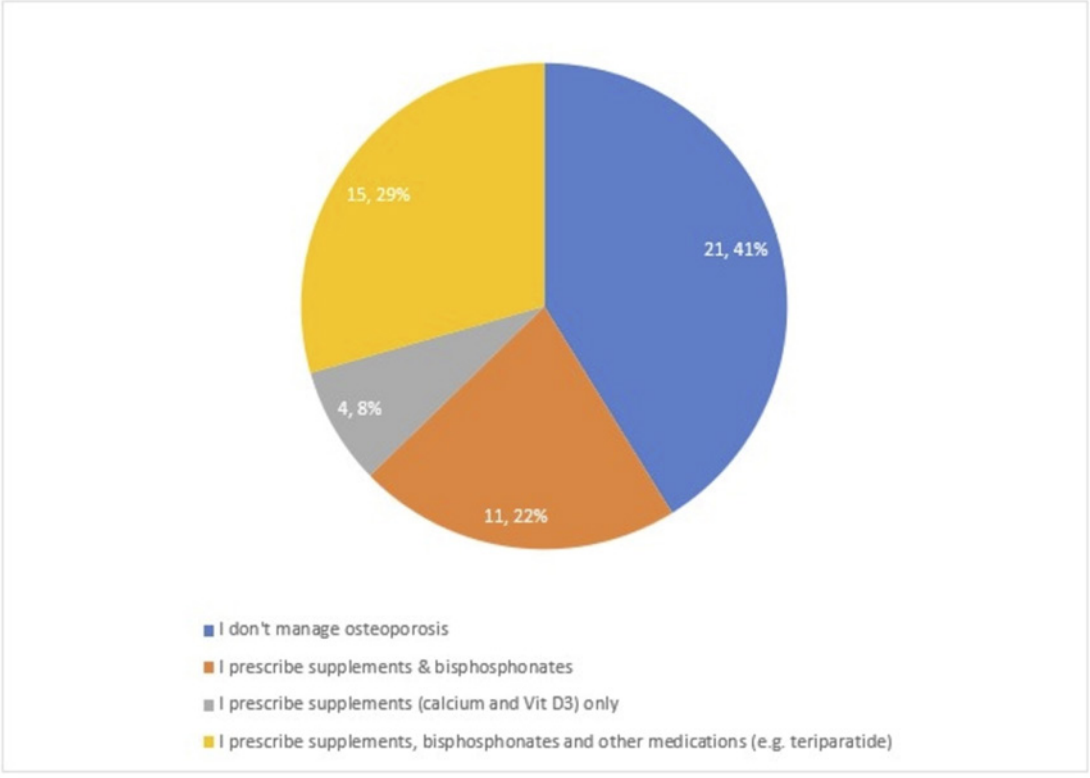


Figure 4: Preferred osteoporosis treatment plan by study participants

Discussion

The global burden of osteoporosis is significant and expanding with the aging of the population[9].Increased morbidity and mortality following an osteoporotic fracture is well established[10, 11].Treatment of osteoporosis effectively reduces fracture incidence[12-14]. Fragility fractures have been on the decline for years, but no longer[15]. Screening by the orthopedic surgeon-as part of a broader management plan, has been shown to provide better outcomes[3,16,17].A recent publication demonstrated that only 51% of eligible patients visiting the orthopedic clinic in a local tertiary care hospital had been screened for

osteoporosis[18].A National Plan for Osteoporosis Prevention and Management in Saudi Arabia was published in 2018 by the ministry of health. Yet, the national care gap continues, and the cost of fragility fracture management is over 2 billion Saudi Riyals annually[19]. In our study, 98% of participants would screen eligible patients, yet 88% reported that they would order bone density measurements for eligible patients. This percentage is similar to reports from Canada, Germany, and Italy[20, 21]. Reports from other countries paint a different picture, where orthopedic surgeons from the USA, France, and other countries are not willing as much to screen patients for osteoporosis[20, 22, 23]. The orthopedic surgeon's role in our community seems to vary by practice setting, as most public sector surgeons in our study screened and referred. In contrast, a sizable portion of private sector surgeons would manage osteoporosis solely. Discrepancies between the two sectors are not well established in the literature, but the evidence is present[24].

An essential part of osteoporosis management is the provision of calcium and vitamin D supplements[25]. A recent meta-analysis found that daily calcium and vitamin D supplementation can help reduce hip fracture risk by 16%.26 In this study, most surgeons stated that they would frequently provide their patients with these supplements. A more controversial issue, however, would be the provision of multivitamins. Several reports have shown that no proven clinical benefit is associated with the daily multivitamin supplement[27-29]. Some have shown that self-reported health is better while no clinically measurable benefits exist[30]. A very recent systematic review showed that multivitamin supplementation might reduce fracture risk[31]. In our study, only 14% of the participants would routinely provide their patients with multivitamins.

Vitamin B supplementation in the out-patient orthopedic setting is controversial and has weak evidence supporting it[32]. It is commonly provided without preceding bloodwork, proving deficiency. Widely prescribed for back pain and sciatica cases, yet most studies on the subject are on animals, except for one clinical trial[33-37]. In our study, slightly more participants would provide vitamin B complex supplementation than they would a multivitamin.

Supplementation with chondroitin and glucosamine has been studied. High-level evidence exists that shows that neither chondroitin nor glucosamine is effective in the management of osteoarthritis[5, 38, 39]. Only 22% of the participants in our study, mostly from the private sector, would frequently provide these supplements, and none reported that they would offer it rou-

tinely to eligible patients.

Summary:

The participants in this study are orthopedic surgeons from all over the country. Although the study sample size is small, the results show that the Saudi orthopedic surgeon is aware of his patient's medical management. Although significant variability exists internationally, the Saudi surgeons' practice is similar to his colleagues from developed countries[20]. As for the provision of supplementation, the percentage of participants who would provide supplements in our study is similar to other published reports[40, 41].

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The authors have nothing to disclose.

Conflict of interest statement:

The author has nothing to disclose

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