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## Osteoporosis Knowledge among future healthcare practitioners: Findings from a Malaysian public university (Article)

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### Abstract

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**Background and Objectives:** Students in relevant health-care academic programs are the future professionals who should play an active role in increasing community awareness regarding chronic diseases such as osteoporosis. This research aimed to evaluate the knowledge of osteoporosis, one of the growing health-care burdens in Malaysia, among students belong to three different health occupations programs in a Malaysian University. **Methods:** A cross-sectional study design was conducted to assess the level of knowledge on osteoporosis and to explore the potential association between the study program and osteoporosis-related knowledge among medicine, pharmacy, and allied health sciences students in a Malaysian University. A total of 348 students were approached. The data were collected using validated revised Osteoporosis Knowledge Test questionnaire. **Results:** The results showed variability in knowledge score between students belonging to different study programs. allied health sciences students have the highest overall total score (median = 20) and nutrition score (median = 16), but for exercise score, both students in allied health sciences and medicine programs shared a similar median score (median = 11.5). More than half of the respondents showed adequate knowledge on osteoporosis. The students from allied health sciences exhibited more knowledge on osteoporosis compared to students in other study programs. Among the Kulliyyah of Pharmacy respondents, the majority did not manage to answer correctly on the whole scale. This was evident by total percentage of 69.91% of the respondents scored below than median score. **Conclusion:** There is a considerable gap of knowledge regarding osteoporosis among students in various health occupations academic programs. Pharmacy students particularly need focused learning related to exercise and nutrition in preventing osteoporosis during their academic program. © 2017 Journal of Pharmacy and Bioallied Sciences | Published by Wolters Kluwer - Medknow.

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Health occupations Malaysia osteoporosis students

### Indexed keywords

EMTREE medical terms:

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- 
- 1 Werner, P.  
**Knowledge about osteoporosis: Assessment, correlates and outcomes**  
  
(2005) *Osteoporosis International*, 16 (2), pp. 115-127. Cited 77 times.  
doi: 10.1007/s00198-004-1750-y  
  
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- 
- 2 Khosla, S., Lufkin, E.G., Hodgson, S.F., Fitzpatrick, L.A., Melton III, L.J.  
**Epidemiology and clinical features of osteoporosis in young individuals**  
  
(1994) *Bone*, 15 (5), pp. 551-555. Cited 122 times.  
doi: 10.1016/8756-3282(94)90280-1  
  
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- 
- 3 Lips, P., van Schoor, N.M.  
**Quality of life in patients with osteoporosis.**  
  
(2005) *Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*, 16 (5), pp. 447-455. Cited 209 times.  
  
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- 
- 4 Lam, S.  
**What you need to know about osteoporosis**  
(2008) *Switzerland: International Osteoporosis Foundation*, 24, pp. 36-41.
- 
- 5 Lau, E.M.C., Sambrook, P., Seeman, E., Leong, K.H., Leung, P.C., Delmas, P.  
**Guidelines for diagnosing, prevention and treatment of osteoporosis in Asia**  
  
(2006) *APLAR Journal of Rheumatology*, 9 (1), pp. 24-36. Cited 8 times.  
doi: 10.1111/j.1479-8077.2006.00161.x  
  
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- 
- 6 Giangregorio, L., Fisher, P., Papaioannou, A., Adachi, J.D.  
**Osteoporosis knowledge and information needs in healthcare professionals caring for patients with fragility fractures**  
  
(2007) *Orthopaedic Nursing*, 26 (1), pp. 27-35. Cited 18 times.
- 
- 7 Wolff, I., Van Croonenborg, J.J., Kemper, H.C.G., Kostense, P.J., Twisk, J.W.R.  
**The effect of exercise training programs on bone mass: A meta-analysis of published controlled trials in pre- and postmenopausal women**  
  
(1999) *Osteoporosis International*, 9 (1), pp. 1-12. Cited 420 times.  
doi: 10.1007/s001980050109  
  
[View at Publisher](#)
- 
- 8 Scott, J.C.  
**Epidemiology of osteoporosis**  
  
(1997) *Journal of Clinical Rheumatology*, 3 (2 SUPPL.), pp. S9-S13. Cited 7 times.
-

9 Lim, P.S., Ong, F.B., Adeeb, N., Seri, S.S., Noor-Aini, M.Y., Shamsuddin, K., Hapizah, N., (...), Wan, H.W.H.

### Bone health in urban midlife Malaysian women: Risk factors and prevention

(2005) *Osteoporosis International*, 16 (12), pp. 2069-2079. Cited 26 times.

doi: 10.1007/s00198-005-2003-4

[View at Publisher](#)

---

10 Ray, N.F., Chan, J.K., Thamer, M., Melton III, L.J.

### Medical expenditures for the treatment of osteoporotic fractures in the United States in 1995: Report from the National Osteoporosis Foundation

(1997) *Journal of Bone and Mineral Research*, 12 (1), pp. 24-35. Cited 1039 times.

doi: 10.1359/jbmr.1997.12.1.24

[View at Publisher](#)

---

11 Juby, A.G., Davis, P.

### A prospective evaluation of the awareness, knowledge, risk factors and current treatment of osteoporosis in a cohort of elderly subjects

(2001) *Osteoporosis International*, 12 (8), pp. 617-622. Cited 62 times.

doi: 10.1007/s001980170060

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---

12 Cheung, E.Y., Tan, K.C., Cheung, C.L., Kung, A.W.

Osteoporosis in East Asia: Current issues in assessment and management

(2016) *Osteoporos Sarcopenia*, 2, pp. 118-133. Cited 3 times.

[Last accessed 2016 Nov]

<http://www.sciencedirect.com/science/article/pii/S2405525516300310/pdf?md5=26d0d9efaaa7cdabbdef8f704281fb3&pid=1-s2.0-S2405525516300310-main.pdf>

---

13 Chan, M.F., Kwong, W.S., Zang, Y.-L., Wan, P.Y.

### Evaluation of an osteoporosis prevention education programme for young adults

(2007) *Journal of Advanced Nursing*, 57 (3), pp. 270-285. Cited 26 times.

doi: 10.1111/j.1365-2648.2006.04091.x

[View at Publisher](#)

---

14 Kasper, M.J., Peterson, M.G.E., Allegrante, J.P.

### The need for comprehensive educational osteoporosis prevention programs for young women: Results from a second osteoporosis prevention survey

(2001) *Arthritis Care and Research*, 45 (1), pp. 28-34. Cited 40 times.

[View at Publisher](#)

---

15 Ford, M.A., Bass, M., Zhao, Y., Bai, J.B., Zhao, Y.

Osteoporosis knowledge, self-efficacy, and beliefs among college students in the USA and China

(2011) *J Osteoporos*, 2011, p. 729219. Cited 16 times.

16 Rosenstock, I.M., Strecher, V.J., Becker, M.H.

### Social Learning Theory and the Health Belief Model

(1988) *Health Education & Behavior*, 15 (2), pp. 175-183. Cited 1879 times.

doi: 10.1177/109019818801500203

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---

- 17 Lypaczewski, G., Lappe, J., Stubby, J.  
'Mom & me' and healthy bones. An innovative approach to teaching bone health.  
(2002) *Orthopaedic nursing / National Association of Orthopaedic Nurses*, 21 (2), pp. 35-42. Cited 5 times.  
[View at Publisher](#)
- 
- 18 Piaseu, N., Schepp, K., Belza, B.  
Causal analysis of exercise and calcium intake behaviors for osteoporosis prevention among young women in Thailand  
(2002) *Health Care for Woman International*, 23 (4), pp. 364-376. Cited 34 times.  
doi: 10.1080/0739933029008937  
[View at Publisher](#)
- 
- 19 Al-Zu'bi, A., Almuhtaseb, N., Amayreh, I.  
Osteoporosis awareness in a sample of teenage girls in Jordan  
(2010) *Jordan Medical Journal*, 44 (4), pp. 420-426. Cited 2 times.
- 
- 20 Berarducci, A.  
Senior nursing students' knowledge of osteoporosis.  
(2004) *Orthopaedic nursing / National Association of Orthopaedic Nurses*, 23 (2), pp. 121-127. Cited 13 times.  
[View at Publisher](#)
- 
- 21 Amre, H., Safadi, R., Jarrah, S., Al-Amer, R., Froelicher, E.S.  
Jordanian nursing students' knowledge of osteoporosis  
(2008) *International Journal of Nursing Practice*, 14 (3), pp. 228-236. Cited 4 times.  
doi: 10.1111/j.1440-172X.2008.00691.x  
[View at Publisher](#)
- 
- 22 Abushaikha, L., Omran, S., Barrouq, L.  
Osteoporosis knowledge among female school students in Jordan  
(2009) *Eastern Mediterranean Health Journal*, 15 (4), pp. 906-911. Cited 7 times.  
[http://www.emro.who.int/emhj/1504/15\\_4\\_2009\\_0906\\_0911.pdf](http://www.emro.who.int/emhj/1504/15_4_2009_0906_0911.pdf)
- 
- 23 Gendler, P.E., Coviak, C.P., Martin, J.T., Kim, K.K., Dankers, J.K., Barclay, J.M., Sanchez, T.A.  
Revision of the Osteoporosis Knowledge Test: Reliability and Validity  
(2015) *Western Journal of Nursing Research*, 37 (12), pp. 1623-1643. Cited 2 times.  
<http://www.sagepub.com/ejournals>  
doi: 10.1177/0193945914537565  
[View at Publisher](#)
- 
- 24 Nguyen, V.H., Wang, Z.  
Osteoporosis knowledge of students in relevant healthcare academic programs  
(2012) *Journal of Osteoporosis*, 2012, art. no. 383412.  
doi: 10.1155/2012/383412  
[View at Publisher](#)
- 
- 25 Miller, M.G., Berry, D.C.  
Health-related physical fitness knowledge of student allied health professions  
(2000) *Evaluation and the Health Professions*, 23 (3), pp. 306-318. Cited 6 times.
-

- 26 Eyigör, S., Karapolat, H., Durmaz, B.  
Medical students' knowledge of osteoporosis in Ege University Faculty of Medicine

(2008) *Romatizma*, 23 (3), pp. 77-81. Cited 2 times.  
[http://romatizma.dergisi.org/pdf/pdf\\_ART\\_262.pdf](http://romatizma.dergisi.org/pdf/pdf_ART_262.pdf)

- 27 Gurney, S., Simmonds, J.  
Osteoporosis: a teenage perspective

(2007) *Physiotherapy*, 93 (4), pp. 267-272. Cited 7 times.  
doi: 10.1016/j.physio.2006.12.004

[View at Publisher](#)

- 28 Kulp, J.L., Rane, S., Bachmann, G.  
Impact of preventive osteoporosis education on patient behavior: Immediate and 3-month follow-up

(2004) *Menopause*, 11 (1), pp. 116-119. Cited 29 times.  
doi: 10.1097/01.GME.0000079221.19081.11

[View at Publisher](#)

- 29 Sayed-Hassan, R., Bashour, H., Koudsi, A.  
Osteoporosis knowledge and attitudes: A cross-sectional study among female nursing school students in Damascus

(2013) *Archives of Osteoporosis*, 8 (1-2), art. no. 149. Cited 7 times.  
doi: 10.1007/s11657-013-0149-9

[View at Publisher](#)

- 30 Tomishige-Mukai, E., Kawachi, A., Kiyohara, E., Esaki, F., Sonoda, J., Shinya, T.  
Instructing students to measure their own bone density and prepare a simulated health class during pharmacy school improves their awareness and understanding of osteoporosis prevention  
(2016) *J Pharm Health Care Sci*, 2, p. 11.

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