ORIGINAL ARTICLE

Knowledge, Attitude and Practice Regarding Osteoporosis With Dietary Calcium Intake Among Women in Health Campus, Kubang Kerian, Kelantan

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ABSTRACT

Introduction: Knowledge, attitude, and practice (KAP) regarding osteoporosis and relation to calcium intake is crucial, especially for women who are at risk of developing osteoporosis. This study aims to determine the association between KAP osteoporosis and calcium intake and identify the mean differences of KAP osteoporosis and calcium intake with sociodemographic background. **Materials and methods:** This cross-sectional study was conducted involving 174 women in the Health Campus, Universiti Sains Malaysia, Kelantan using stratified random sampling. The questionnaire consisted of socio-demographic data, KAP osteoporosis and food frequency questionnaire (FFQ) to determine dietary calcium intake. **Results:** Participants aged 22.0 (IQR 3.0) years old, majority were Malays (80%) students (85%) and single (89%). Most of the participants had poor KAP scores (64%) [Mean score: 46.82 ± 10.50] with poor knowledge (56%) and poor attitude (96%) regarding osteoporosis. Majority of the participants (71%) did not meet the RNI calcium requirement (1000 mg/day) with a median (IQR) of 791.93 (577.08) mg/day. There was a moderate positive correlation between knowledge and practice regarding osteoporosis (r = 0.40) as well as a moderate positive correlation of knowledge and attitudes regarding osteoporosis (r = 0.22) and weak significant correlation between attitudes and practices regarding osteoporosis (r = 0.16). **Conclusion:** Young adult women has poor knowledge and poor attitude regarding osteoporosis and did not achieve the calcium intake. Further studies may be required to investigate other sociodemographic backgrounds and lifestyle factors that can impact on KAP of osteoporosis and calcium intake involving younger age group.
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INTRODUCTION

Osteoporosis affects 13% to 18% women aged 50 and over, and 70% of women over the age of 80 years old [1]. The prevalence of osteoporosis in Malaysia was 15.3% of overall population and 32.6% of those aged more than 71 years [2]. Osteoporosis is a bone disease which can be characterised by the decrease of bone strength that puts a person at risk of fracture, particularly of the spine, wrist, and hip [3]. Osteoporosis is considered to be the major cause of fractures, particularly among postmenopausal women, but can also occur to older men [4]. The usual age of menopause is between the ages of 45 and 55 years old, and the average age is approximately 50 years old [5]. Women have a high risk of developing osteoporosis due to the decrease in estrogen level after menopause which causes rapid progression of bone loss towards porous bone [6–8].

Osteoporosis exposes the individual to acute pain and serious medical complications in the short and long term of life due to possible fractures of the spine, wrist, shoulder, pelvis, and upper arm [9]. According to a study on osteoporotic fractures in China, the most common medical complications arising from osteoporotic procedure are constipation (25.6%), stroke (25.2%), pneumonia (17.0%), urinary tract infection (16.3%), and arrhythmia (11.8%) where it was found to be significantly higher after the said procedure compared to before the fracture occurs [10]. Followed by the medical complications, this can lead to low quality of life due to impairment in physical function, feeling of discomfort, sensation of pain, loss of self-esteem, depression and social isolation [11]. Furthermore, the medical complications may cause a significant economic burden involving acute inpatient treatment and management of hip fractures, rehabilitation after hospitalization, and other additional fractures if osteoporosis is untreated [12].

The mean calcium intake among adult age 20 to 65 years old in Malaysia was 490.3 mg/day which is lower

than the requirement of calcium intake according to the Recommended Nutrient Intakes (RNI) 2017 for Malaysian adult [13]. The recommended intake is 1000 mg/day (for men and women), while for women 50 years and above requiring 1200 mg/day of calcium intake [14, 15]. Insufficient calcium intake may cause reduced bone mineral content and may lead to rickets (disordered organization of the cartilage matrix) or osteomalacia (impaired bone mineralization), osteoporosis and other bone disorder [16]. Natural sources of calcium can be found in milk, yogurt, and cheese. Other than milk and dairy products, calcium-rich foods in the Malaysian diet are such as canned sardines and anchovies, beans products such as yellow dhal, tofu and tempeh, locally processed foods including shrimp paste, *cincalok* and *budu*, and certain vegetables such as kale, broccoli, and spinach. Besides that, there also other calcium fortified product such as high-calcium milk, yogurt, breakfast cereals, biscuits, and rice [14].

It has been shown that knowledge, attitude and practice (KAP) of osteoporosis is related to its prevention which is ensuring sufficient dietary calcium intake. The level of knowledge in an individual can contribute to the perceived awareness, self-efficacy, and self-motivation towards attitude and practice. Having sufficient knowledge about the preventive measure of osteoporosis can lead to changes in the attitude and practices of any person in ensuring adequate intake of calcium. It is correlated with a study that individuals with good knowledge regarding osteoporosis and calcium intake take steps to include milk in their diet, and this positively illustrates the relationship of KAP of osteoporosis with adequacy of dietary calcium intake [17].

KAP of osteoporosis leads to the effectiveness of preventive measures and may associate with dietary calcium intake [18]. A deeper understanding of these interactions will ultimately help them make better decisions about how to maximise the formation of their bone mass at a younger age in order to avoid the risk of osteoporosis in the later stage of life. Furthermore, identifying the participant background that might influence the KAP level of osteoporosis (such as age, gender, education level, ethnicity, and monthly household income) found to be poorly understood as lack of evidence from previous study. Other factors (which are not being investigated in this study) that influence KAP of osteoporosis such as lifestyle factor, notably among health-conscious individuals that practise healthy lifestyle such as being active in physical activities, having adequate exposure to the sun reflects on the good knowledge, attitude and practice of osteoporosis [19–21]. Hence, this present study aims to identify level of knowledge, attitude, and practises (KAP) regarding osteoporosis and its relationship with dietary calcium intake among women. In addition, this study also investigating the background of participants as moderating variables towards the KAP level of osteoporosis and dietary calcium intake may provide a better understanding and clearer picture of the relationship.

MATERIALS AND METHODS

Research design

This cross-sectional study was conducted from September 2022 to February 2023. The sample size of the participants was obtained using one proportion formula by Krejcie et al. (1970), the proportion (p) value was obtained from a study of dietary calcium intake from Azhar et al. (2020) which is 37.8% that includes 20% of drop out, hence a total of 174 participants involving women in USM Health Campus, Kubang Kerian, Kelantan aged between 18 to 60 years old were involved in this study. Participants of this study were chosen using stratified random sampling where the students and staff were stratified into 2/3 of students and 1/3 of staff from the total number of participants. Before collecting the data, the participants are selected randomly based on name list for undergraduate students and staff for each school in Health Campus USMKK. Participant having lactose intolerance, acute or chronic condition that limits the ability to do physical activity and also those taking calcium supplement and hormonal therapy were excluded from this study.

Study instruments

Participants were interviewed to obtain information regarding sociodemographic using self-administered questionnaire. For knowledge, attitude, and practice (KAP) regarding osteoporosis, it was assessed by using reliable and validated questionnaire with Cronbach's alpha of 0.79 from previous researchers [17, 20, 23]. The questionnaire for KAP regarding osteoporosis consisted of 37 items. For knowledge domain, the total item is 17 questions which comprised of general risk and factor, and also the complications of osteoporosis. Both attitude and practice regarding osteoporosis consisted of 10 items. In the instance of questions that were negatively quoted, reversal scoring was applied. The scores in the knowledge, attitude, and practice areas were divided into three categories: poor (less than and equal to 50%), fair (51 to 69%), and good (70% and above) [20].

The dietary calcium intake was assessed by using validated semi-quantitative food frequency questionnaire (FFQ) which adapted by Malaysian Adult Nutrition Survey [24]. The questionnaire consisted of 165 food items which were divided into 13 food groups. Information on food item based on frequency of consumption (day, week, or month), the serving size (cup, slices, pieces, spoon, etc.) [25], and number of servings consumed each time the food item eaten were collected. The serving size were converted into gram according to Nutrient Composition of Malaysian Foods and Atlas of Food Exchanges & Portion Sizes [26]. Then, the amount of daily food intake was calculated using formula by Wessex Institute of Public Health Medicine

(1995). The conversion factors were used to estimate food intake which based on the frequency of food intake. The amount of daily food intake for each food item were transferred into dietary analysis software, Nutritionist ProTM software to analyse the daily calcium intake.

Data analysis

Statistical Package for Social Science (SPSS) version 26.0 for statistical analysis. Descriptive statistics was used which numerical data were presented as mean ± SD or median (IQR) based on their normality distribution. Meanwhile categorical data were presented as frequency and percentages. Inferential statistics Spearman's correlation test, Independent T-test (or Mann-Whitney test) and One-Way ANOVA (or Kruskal-Wallis test). Further analysis to identify mean differences of more than two groups from One-Way Anova (or Kruskal-Wallis) was using Dunnett's C Post-hoc (or Bonferroni's correction).

Ethical clearance

This study was approved by Research Ethics Committee (Human), USM (USM/JEPEM/22060434).

RESULTS

Table I presents the sociodemographic data of the participants. Majority of the participants were students (85%) and only 15% are made up of the staff that comprised of university staffs (lecturer, clinician, research assistant, administration officer and clerk). Median age of the participants was 22.0 (IQR 3.0) years old and majority participants were Malay (80%), single (89%) and had or currently on Bachelor's degree study (90%) and household income falls on the B40 lower income-range < RM 4,849 (57%).

TABLE I: Sociodemographic background of participants (n = 174)

Variables	Frequency (n)	Percentage (%)
Age (years old) [Median (IQR)]	22.0 (3.0)	
18 - 30	149	86
> 30	25	14
Ethnicity		
Malay	139	80
Chinese	20	11
Indian	7	4
Others	8	5
Marital Status		
Single	155	89
Married	17	10
Widow	2	1
Social Status		
Student	147	85
Academic staff	9	5
Non-academic staff	18	10

CONTINUE

TABLE I: Sociodemographic background of participants (n = 174) (CONT.)

Variables	Frequency (n)	Percentage (%)
Education Qualification		
Secondary	3	2
Diploma	3	2
Bachelor's Degree	158	90
Master's Degree	5	3
PhD	4	2
Others	1	1
Monthly Household*		
< RM 4,849	99	57
RM 4,850 – RM 10,959	49	28
> RM 10,960	26	15

* Based on Finance Department of Malaysia

The finding showed majority of the participants had poor score of total KAP regarding osteoporosis (63.8%), followed by average score (33.3%) and good score (2.9%) which the mean for the total score of knowledge, attitude, and practice (KAP) regarding osteoporosis was 46.82 ± 10.50 (Table II). For knowledge domain, majority of the participants can be classified into poor knowledge score (56%) [median and IQR score was 47.00 (36.00)]. For attitude domain, 96% of the participant had poor score of attitudes [median and IQR score was 15.00 (30.00)]. Lastly for practice domain, most of the participants can be classified into average practice score (58%), followed by good practice score (28%) and poor practice score (14%) [the mean ± SD score was 62.86 ± 9.99]. Based on Table II and Fig. 1, the indicated median dietary calcium intake was 791.93 (IQR 577.08) mg/day which represents an inadequate of calcium intake among participants according to the requirement of calcium intake for 1000 mg/day by the RNI 2017. Majority of the participants were not achieving the RNI 2017 for calcium intake (70.7%) compared to the participants that achieved RNI of calcium intake which is >1000 mg/day (29.3%).

TABLE II: Descriptive data of KAP regarding osteoporosis and dietary calcium intake

Variables	Median (IQR) / Mean ± SD	Frequency (n)	Percentage (%)
Knowledge			
Poor		97	56
Fair	47.00 (36.00)	58	33
Good		19	11
Attitude			
Poor		167	96
Fair	15.00 (30.00)	2	1
Good		5	3
Practice			
Poor		25	14
Fair	62.86 ± 9.99	101	58
Good		47	28

CONTINUE

TABLE II: Descriptive data of KAP regarding osteoporosis and dietary calcium intake. (CONT.)

Variables	Median (IQR) / Mean ± SD	Frequency (n)	Percentage (%)
Total Score of KAP			
Poor	46.82 ± 10.50	111	63.8
Fair		58	33.3
Good		5	2.90
Dietary calcium intake (mg/day)			
>1000 mg/day	791.93 (577.08)	51	29.3
<1000 mg/day		123	70.7

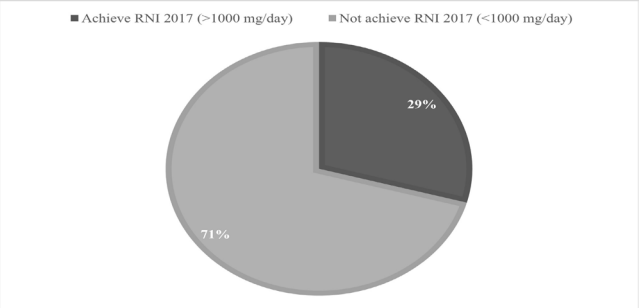

Figure 1: Percentage of participants achieving calcium intake according to RNI 2017.

Table III shows the results of the study that identified the association between domains of KAP regarding osteoporosis (knowledge vs attitude, knowledge vs practice and attitude vs practice), domains of each KAP and total score of KAP with dietary calcium intake. It was demonstrated that there was a moderate significant association between domains of knowledge and practice of osteoporosis (r = 0.40, p < 0.001,) additionally between knowledge and attitude of osteoporosis (r = 0.22, p = 0.003). In addition, there was also a weak significant association between domains of attitudes and practices towards osteoporosis (r = 0.16, p = 0.03). However, in this current study showed that there was no significant association between total KAP score of osteoporosis and the dietary calcium intake (r = 0.14, p = 0.06), as well as domain of knowledge, attitude and practice with calcium intake (p > 0.05).

TABLE III: Correlation between domain of knowledge, attitude, and practice of osteoporosis and calcium intake.

Variables	Knowledge	Attitude	Practice	Total KAP	Calcium intake
	Correlation coefficient, *r*-value				
Knowledge	-	0.40*	0.22*	-	0.13
Attitude	0.40*	-	0.16*	-	0.12
Practice	0.22*	0.16*	-	-	0.10
Total KAP	-	-	-	-	0.14
Calcium intake	0.13	0.12	0.10	0.14	-

* shows significant (p<0.001) using Spearman's Correlation Test

There were significant differences of the KAP score regarding osteoporosis and calcium intake according to different background of participants (Table IV). It showed that the mean KAP score of osteoporosis in age group of 18 to 30 years old was higher (47.40 ± 10.74) compared to age group of more than 30 years old (43.36 ± 8.32) (p = 0.04). Furthermore, Indian scored the lowest in the total score of KAP regarding osteoporosis (39.33 ± 8.97) compared to Malay (47.41 ± 10.48) and Chinese (48.30 ± 9.95) (p = 0.01). The participants that currently studying or had Bachelor's degree had higher score of KAP regarding osteoporosis (47.29 ± 10.46) compared to secondary or Diploma level (35.17 ± 7.31) (p = 0.02). In addition, it discovered that participants with monthly household income of < RM 4,849 had higher dietary calcium intake (825.51; IQR 539.58 mg/day) compared to household income of RM 4,850 – RM 10,959 (631.96; IQR 585.99 mg/day) (p = 0.03). Meanwhile, those who non-married had higher dietary calcium intake (809.80; IQR 578.15 mg/day) compared to those who were married/widow (613.52; IQR 388.06 mg/day) (p = 0.03).

TABLE IV. Mean difference of KAP score regarding osteoporosis, calcium intake (mg/day) with sociodemographic data.

Variables	KAP Score		Calcium Intake (mg/day)	
	Mean ± SD	*p*-value	Median (IQR)	*p*-value
Age (years old)				
18-30 years old	47.40 ± 10.74	0.04*	809.80 (565.77)	0.05
>30	43.36 ± 8.32		631.96 (558.54)	
Ethnicity				
Malay	47.41 ± 10.48[a]	0.01#	789.15 (611.94)	0.31
Chinese	48.30 ± 9.95[b]		866.33 (640.47)	
Indian/Others	39.33 ± 8.97[ab]		778.54 (469.46)	
Marital status				
Single	47.03 ± 10.74	0.35	809.80 (578.15)	0.03*
Married/Widow	45.05 ± 8.32		613.52 (388.06)	
Education Qualification				
Secondary/ Diploma	35.17 ± 7.31[a]	0.02#	683.41 (564.58)	0.18
Bachelor's Degree	47.29 ± 10.46[a]		806.08 (569.77)	
Master's Degree, PhD, Others	46.00 ± 9.86		587.04 (511.32)	
Monthly Household				
< RM 4,849	46.40 ± 10.93	0.10	825.51 (539.58)[a]	0.03#
RM 4,850 – RM 10,959	45.57 ± 9.91		631.96 (585.99)[a]	
> RM 10,960	50.73 ± 9.29		678.89 (369.77)	

*: Significant (p<0.05) tested using Independent T-test/ Mann-Whitney test
#: Significant (p<0.05) tested using One-Way ANOVA test/ Kruskal-Wallis test
[ab] showed paired which have different of mean in group showed using Dunnett's C post hoc test/ Bonferroni's correction

DISCUSSION

Previous researchers revealed that higher educational level has associated significantly with knowledge on osteoporosis [15, 20] however, in this particular study showed different outcomes. Although the participants have health-related education background but in this current study it was found that more than half of the participants had poor score of total KAP regarding osteoporosis with poor knowledge and poor attitude regarding osteoporosis. A study conducted among adult patients in Bashair University Hospital reported of poor knowledge (45.2%), poor attitude (40%), and moderate practice (54%) regarding osteoporosis due to the influence of educational level since majority of the participants (33%) only had basic school which indicates low exposure about knowledge regarding osteoporosis [28]. Even in this present study, majority of them reported to have bachelor's degree however, most of the participants were students and representing as the young adult generation (age 18 to 25 years old) which they were less concerned regarding the seriousness of osteoporosis [29, 30] as the disease are not a common occurrence in their age. Hence, most of them did not do any preventive measure or changes towards healthy lifestyle to prevent this disease in the future.

The remaining participants consist of university staffs also might not prioritise bone health in their lives and may be overly preoccupied at work where previous study that showed 72 subjects out of 400 failed to follow up for bone health screening and education due to work and lost interest [29]. Moreover, low level of awareness and the unavailability of varied reading material could be seen as a factor as to why majority of these women were confused between osteoporosis and arthritis, leading to them having inaccurate information regarding osteoporosis [31]. However, the finding was contradicted with other previous studies in Malaysia regarding KAP of osteoporosis in Malaysia that showed high to moderate of knowledge and attitude, but poor practice on osteoporosis preventive measures [15, 30, 32]. A study done among 232 participants aged 21 to 50 years (majority aged 26 to 30 years old) in Kuala Lumpur reported the knowlegde and attitude was moderate [15]. Meanwhile another study among 228 participants aged 30 years and above in Kuala Lumpur found out the KAP was also good [32]. The discrepancies of these two studies mentioned and in this present study might be due to different population of age which mostly adult instead of young adult and locality was urban instead of suburban as in this study. However, another research done among Allied Health Sciences students in Malaysia (n = 108) with mean age of 22.39 ± 1.17 years old using convenience sampling discovered that they have moderate/fair score for knowlegde and attitude and poor for practice score [30]. Although in this current study had similarities in terms of sampling age, however the diffreences might be due to the scoring used in previous study was mean instead of median as in this study.

It has been identified that high percentage of the participants did not achieve the dietary calcium intake and only of the participants achieved RNI of calcium intake. The median of 791.93 (IQR 577.08) mg/day represents an inadequate of calcium intake among participants according to the requirement of calcium intake for 1000 mg/day by the RNI 2017. The finding was in line with the Malaysian Adult Nutrition Survey (MANS) in 2014 that showed the mean daily calcium intake among 1,420 female population was 527 mg/day (51% of RNI) [33]. Inadequacy of calcium intake in the study might be related to cultural diet especially in Malaysia or Asian country where a previous study reported there is a less intake of milk with less than a quarter of a serving was drank daily by adults in East Asia and Oceania. Milk contributes high content of calcium [33]. Moreover, the unavailability of refrigerator in a hostel setting reduces the sources of calcium intake (such as yogurt, cheese, and milk) as it diminishes the ability to store the food items among the students. The university cafй operation also had limited availability of calcium-rich food and thus, it was not easily accessible for students and staff [34]. The less self-conscious or self-efficacy also inhibits the continuous commitment to consume calcium-rich food [17].

In this current study revealed that those who have high knowledge of osteoporosis will also have good attitude and better action (practice) regarding osteoporosis. In addition, those who with good attitude will also be following the do's and don'ts (practice) of anything related to osteoporosis. This finding showed people who has good attitude regarding osteoporosis would believe the risk of osteoporosis and tend to practice the osteoporosis preventive measures [35]. A low level of perceived awareness about osteoporosis may be linked to a negative attitude and the perception of the risk to the condition [20]. Views regarding osteoporosis might potentially be influenced by self-efficacy and self-motivation. especially among younger individual [36]. Self-efficacy is the determination that an individual must start osteoporosis prevention which associated with attitude, as it contributes to motivation and positive thinking to implement the changes [37].

However, there was no significant association between knowledge, attitude, practice (KAP) score and total KAP score regarding osteoporosis and dietary calcium intake. The finding was in line with the previous study among female medical entrants in Sri Lanka that showed lack of knowledge regarding osteoporosis was not related to the dietary calcium intake [38]. It was highlighted that although the participant had low level of knowledge regarding osteoporosis, but their motivation leads them to consume calcium rich food to avoid bone diseases. The finding of the study also represents the peer influence can affect the attitude and practice

of osteoporosis preventive measure such as dietary calcium intake since majority of the participant in the study were students [30]. Besides, the participants might not pay much attention towards osteoporosis and the seriousness of osteoporosis as a disease although they could obtain the exposure regarding it through health education program and campaign especially for people with health-related education background, where all resources of information are readily available [20].

There was no significant relationship of the main parameters as many other factors that might influence the relationship where KAP on osteoporosis is not sole reason of inadequate dietary calcium intake. This might be due to other factors such as different sociodemographic background, physical activity, lack of sun exposure, parental education, measure of self-efficacy and self-motivation especially among younger adults that might impact on the associated parameters. In this study, participants currently studying and had Bachelor's degree had higher score of KAP regarding osteoporosis compared to secondary or Diploma level. Higher education level showed better knowledge, understanding and awareness about osteoporosis since they tend to be more curious and have opportunities to learn about health-preventive behaviour [39, 40]. Additionally, it showed that Indian descent scoring the lowest in the score of knowledge, attitude, and practice regarding osteoporosis compared to Malay and Chinese. It was lined with the previous study among students of public university that reported Indian had the least score of mean in knowledge (194.04) and attitude (223.26) compared to both Malay and Chinese descent [20] where it might be due to the low perception of susceptibility since Indian had less prevalence (10%) of low hip BMD (osteoporosis or suboptimal bone health) after other ethnic groups (2%), followed by Malay (26%) and Chinese (62%) [8].

Meanwhile for dietary calcium intake, participants with monthly household income of less than RM 4,849 (B40 lower income group) have higher dietary calcium intake compared to household income of RM 4,850 – RM 10,959 (M40 moderate income group). The reason may be due to the fact that lower household income may be more involved in cooking preparation for the family compared to the option of buying outside food which would negate the concern regarding the nutritional requirement [41]. Even M40 group have higher total household income which initially being thought to spent better on healthier food items [42], but they also have higher financial burden as government subsidies are more focused towards B40 group of people and that lead to overestimating M40 group to have better calcium selection when eventually it was found they have lower dietary calcium intake.

It also demonstrated that the single participants have higher dietary calcium intake compared to married/widow participants. As majority of the participants who were single are the students, this finding is consistent with the previous study among Nutrition and/or other Health Sciences departments (NHS) and general-student population which it showed students that involved in nutrition and/or health related courses consumed more calcium food (>50%) where it comprises of dairy products [43]. Besides, single participants have no family commitment which can affect or restrict their dietary intake compared to married participants that consisted most of the staffs, which could be related to working individuals being busy with their working life and having lack of accurate information regarding the daily recommendations of calcium intake for adult [15].

CONCLUSION

The highlight of this study found that most participants have poor knowledge and poor attitude regarding osteoporosis and most of them do not achieve the dietary calcium intake. Even with related educational backgrounds such as the health sciences and medical programmes but the outcome was unforeseen as the initial expectation of mostly would score fairly well in the knowledge towards osteoporosis. However, lack of self-efficacy and self-motivation among these students implies that younger adults from different educational settings or even with insufficient education and information on health might not even know what does osteoporosis and the importance of calcium intake. Self-efficacy and self-motivation is an individual's belief and determination in their capacity to act in the ways necessary to reach specific goals. These two traits are important to engage with health prevention outcomes, specifically in consuming adequate amount of calcium daily.

In an effort to increase understanding the association of KAP of osteoporosis and dietary calcium, it would be suggested for future research to focus on sampling either among university students or among adults in Kota Bharu to give clearer view of how different educational level associated with KAP. Meanwhile, it can be expanded to those who do not have health educational backgrounds and towards younger individuals such as primary and secondary school students should be done. This eventually would enable the health educators to educate these generations since young on healthier dietary lifestyle especially importance of calcium, adequate amount of calcium intake daily and impacts of poor calcium consumption. Other than that, policy makers from Ministry of Health (MOH) would also be able to plan and strategize on how to aid in increase consumption of calcium in population such as include

in annual financial budgeting to supply milk or calcium food sources at school or household, as being practiced in other countries as well.

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