Knowledge and attitude of lifestyle medicine-based approach among health care providers working in Dubai Academic and Health Corporation

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Abstract

Introduction: Lifestyle modifications can effectively prevent and delay the progression of many costly diseases, such as diabetes and obesity. Implementing lifestyle intervention in primary health care can improve the quality of life and cost of care. Shortage of knowledge and lack of skills are the main barriers to implement a lifestyle-based approach in primary health care.

Aim: To assess the level of knowledge, attitudes, and importance of lifestyle medicine pillars among physicians and nurses actively working in Dubai Academic Health corporation - Primary health care service.

Methodology: An Observational cross-sectional study was designed. Convenient sampling method was used. Respondents were stratified into physicians and nurses. Online based validated questionnaire was used to collect data. Mean composites were used to compare between groups. SPSS version 29.0 was used to analyse data.

Results: Four hundred and twenty-six participants (426) were invited to participate in the study. The response rate was 61.97% (106 physicians, 158 nurses). The mean composite of knowledge for physicians was 0.632 +/- 0.18 vs 0.414 +/- 0.13 for nurses (p value < 0.05). The mean composite for interest in physicians' group was 0.93 +/- 0.27 vs 0.78 +/- 0.39 in nurses' group (p value <0.05). Mean composite for importance in physicians' group was 3.75 +/- 1.18 vs 3.87 +/- 0.78 in nurses' group (p value >0.05). Healthy nutrition was the top important pillar and social connectedness was the less important pillar.

Conclusion: The study showed the need for more knowledge among health care providers, particularly among the nurses' population.

Key words: Lifestyle medicine, knowledge, attitude, Dubai.

Introduction

The American Board of Lifestyle Medicine (1) and the British Society of Lifestyle Medicine (2) define lifestyle medicine as the branch of medicine that uses evidence–based therapeutic interventions as a primary modality that supports behavioural changes through client-centred techniques to improve healthy eating, physical activities, sleep, mental health, social well-being, and harmful substances and behaviours. The American Society of Preventive Medicine (3) defines the Lifestyle medicine-based approach as an approach that uses lifestyle medicine modalities and behavioural changes to prevent and manage chronic diseases.

World Health Organization found that 60% of factors associated with a person's health and quality of life were Lifestyle-related (4). Studies (5) (6) showed that many illnesses, disabilities such as cardiovascular disease, obesity and overweight, metabolic diseases, and some cancers like lung cancer and even death are related to unhealthy behaviours. Schroder (7) showed that nearly 80% of chronic diseases are preventable, and lifestyle behaviours are responsible for 40% of premature deaths. Lifestyle modifications are essential in the rising epidemic of non-communicable diseases (8). They can effectively prevent and delay the progression of many costly diseases, such as diabetes and obesity (8).

Research has rapidly recognized the roles that sleep, stress, and social connection play in morbidity and mortality (9,10,11). The cost-effective benefits of Lifestyle vs. pharmacotherapy were prominent in many studies (12,13). Eriksson et al (14) found that implementing lifestyle intervention in primary health care can improve the quality of life and cost of care.

There is significant variability between health care providers in primary health care practice in their competencies to work through the different components of lifestyle medicine and their capabilities to produce lifestyle medicine evidence-based recommendations to their patients (15). Many barriers affect the implementation of lifestyle medicine in primary care, such as a shortage of knowledge and a lack of skills among healthcare providers (16,17). This deficiency in implementing lifestyle medicine in clinical practice could be due to a deficiency in education and training programs (18,19). Mondala and Sannidhi (19) found that physicians spend an average of 10 seconds counselling their patients about nutrition. Cardinal et al. (20) recommended that 50% of physicians need training to counsel patients about exercise.

Many studies (21,22) assessed the knowledge and attitude of patients toward a lifestyle medicine-based approach. However, a literature search showed that only some studies assessed the knowledge and attitude of healthcare providers currently working in primary healthcare (23,24). Harkin et al. (25) assessed physicians' knowledge, attitudes, and counselling practices but considered only one component: diet. Others assessed the components of lifestyle medicine among patients with specific diseases such as diabetes type two (26) or hypertension (27,28). In summary, many studies assess knowledge and attitudes toward Lifestyle medicine-based approaches in primary health care; some assess them from the perspective of the patients and non-medical staff, and some view them from the medical staff perspective. This research assesses the knowledge, attitudes, and importance of lifestyle medicine components among primary healthcare providers (physicians and nurses) in Dubai Health Authority, Primary healthcare service. The results of this research can help primary healthcare decision-makers design training programs for more needed groups to improve knowledge and skills in lifestyle medicine, which will reflect positively on patient care and disease outcomes (29).

Aims and Objectives

Health care providers at primary health care centres face many health problems caused by unhealthy habits such as obesity, diabetes, hypertension, and other metabolic diseases. Health care providers differ in their approach to deal with these diseases. This study aims to measure the knowledge and attitudes towards lifestyle medicine-based approach among health care providers (physicians and nurses) who are currently working in Dubai Academic and Health Authority - Primary health care service in Dubai emirate.

1.Assess the level of knowledge about lifestyle medicine among primary health care providers working in primary health care in Dubai Emirate by using a self-reported survey distributed to current workers.
2.Assess the attitudes of primary health care providers working in primary health care in Dubai Emirate towards a lifestyle medicine-based approach by using a self-reported survey distributed to current workers.
3.Assess the importance of lifestyle medicine components from the perspective of health care providers working in primary health care in Dubai Emirate by using self-reported survey distributed to current workers.

Methodology

1. Ethical approval
This study was approved by Mohamed Bin Rashid University Institution board review (MBRU IRB-2023-132) and Dubai Scientific Research Ethics committee (DSREC-11/2023_05).

2. Study type
An observational, descriptive, cross-sectional study was conducted using a self-report questionnaire survey to collect data. This type of study matches the aim and objectives of this study as it estimates the level of knowledge and attitude towards lifestyle medicine-based approach among a section of primary health care providers (physicians and nurses) working in primary health care (30) and can be conducted in a short time with less cost (30).

3. Sampling and sample size
The estimated number of healthcare providers (physicians and nurses) working in primary healthcare is approximately 426 healthcare providers (171 physicians and 255 nurses).

A convenient sampling method was adopted. All healthcare providers (physicians and nurses) were invited to participate in the study through their e-mails. The invitation included the study leaflet and a link to the online questionnaire. Healthcare providers who participated in the questionnaire validity were excluded (20 participants). The study analysis included those who completed and submitted the survey. Respondents' health care providers were stratified into the physicians' and nurses' groups.

Even if participants choose to participate, they can change their minds at any time and withdraw from the study without giving a reason unless they had completed the survey and submitted it or the data had already been analysed.

4. Inclusion criteria and exclusion criteria

4.1. Inclusion criteria

-Current active workers; physicians and nurses.
- Primary health care staff.

4.2. Exclusion criteria

- Medical students in training rotation.
- Volunteers working in primary health.
- Retired and resigned workers.
- Participants in the pilot questionnaire testing.
- Hospital-based staff.

5. Data collection

The data was collected by using a pretested self-reported questionnaire-based survey. An extensive literature review was done to find an open access validated questionnaire to assess the knowledge and attitudes toward lifestyle medicine approach in primary health care providers (physicians and nurses), but results could not find any free open access published questionnaires so a questionnaire was created for the purpose (23); (21); (31).

5.1. Piloting test

The pilot testing for the questionnaire was done in two cycles. Each cycle included five healthcare providers (3 physicians and two nurses) to review the questionnaire (32). Reviewer feedback was used to refine the questionnaire (32). The pilot testing aimed to make the questionnaire understandable and easy to complete by all participants.

5.2. Validation

Face validation was done through two groups (33). The first group included 5 participants; they checked the questionnaire for the intended topic of the survey and determined whether the questions were relevant to capture the intended research topic. The second group included 5 participants; they checked for common linguistic errors, expression, and clarity of questions, which may lead to confusion and repeated questions. Based on his feedback, an expert was consulted, and the questionnaire was revised to the final format.

Content validation was done by sending the revised questionnaire to two experts in the field of lifestyle medicine to assess the content and help remove irrelevant and weak questions. The expert's feedback was received, and the questions were modified based on their comments. The revised questions were sent to them for approval. They agreed on the finalized content of the questionnaire questions and their relevance to the pillars of lifestyle medicine.

The online questionnaire-based survey model was adopted as its cost and efficacy proved to be higher than the complex copy-based questionnaire survey model. Evidence showed that web-based platforms for electronic surveys are less costly and more efficient at catching up with responses (34). A web-based survey (https://www.surveymonkey.com/mp/sign-in/) was used to create and distribute the survey (35). Completed surveys were analyzed from the data collected through the web-based survey platform (https://www.surveymonkey.com/mp/sign-in/).

5.3. Questionnaire format

The survey is composed of three parts. The first part collects demographic data (age, gender, occupation, and duration of occupation). The second part assesses the knowledge and attitudes in lifestyle medicine. The third part ranks the lifestyle medicine pillars.

5.3.1. Knowledge assessment: This part was assessed based on the recommended guidelines from the literature (2) (1). Three MCQs assessed each domain of lifestyle medicine. Eighteen (18) questions were asked in a multiple-choice question pattern with one correct answer and three false answers, one mark for the correct answer, and zero mark for the wrong answers.

5.3.2. Attitude assessment: Four dichotomized questions with "yes" or "no" answers exist. For each yes answer, the participant scored one, and for each No answer, the participant scored 0.

The Likert scale of the lifestyle pillar's importance was assessed by 5 points (not important at all =1, not important =2, neutral =3, important=4 and very important= 5); level of importance per each participant for each pillar registered on the SPSS sheet for data analysis.

5.3.3. Ranking of lifestyle medicine components: The six lifestyle components were listed, and the participant was requested to arrange them based on their importance for him/her in his/her practice, with "6" being the highest importance and "1" being the lowest important.

6. Consent

The completed and submitted questionnaire is a signed consent form for the study. This is explained in the study leaflet information (Appendix 1)

Data Analysis

The following data were collected: age, gender, occupation category, years of experience working in Dubai Academic and Health Corporation, a score of knowledge, attitudes towards lifestyle medicine components, and rank of lifestyle components. Categorial nominal variables like gender and occupation category was coded as: gender

(male = 1, female= 2), occupational category (physician=1, nurse =2). The categorial ordinal variable (Likert scale) also coded (Not important at all=1. Not important=2, Neutral = 3, Important = 4, Very important = 5). Dichotomous, nominal variables were used to assess the attitudes coded as 1=yes and 0=No. SPSS software was used for statistical analysis (IBM, version 29.0) (36).

Descriptive statistics were used to:
• Analyse the study population based on demographic data and to find any correlation between the means and age and duration of work.
- Calculate the mean composite of the level of knowledge.
- Calculate the mean composite of the attitudes about lifestyle components.
- Calculate the mean composite scores of the level of importance of lifestyle components.
- Calculate the overall mean composites.
- Calculate the correlation between means composite of knowledge, age and duration of work.

Inferential statistics compared data to find any statistically associated significance. Graphical representation using appropriate graphs was utilized to make data more transparent and explore any trends or patterns.

Results

Four hundred and twenty-six (426) healthcare providers were invited to participate in the study (171 physicians and 255 nurses). Twenty participants were excluded because they participated in the questionnaire validation. Four hundred and six healthcare providers were eligible to be included in the study (161 physicians and 245 nurses) (Table 1). Two hundred and sixty-four (n=264) responded (106 physicians and 158 nurses). The mean age of physicians was 53.08, SD 7.35 years and for nurses was 35, SD 5.1 years (p- value <0.05). The mean work duration for physicians was 10.86, SD 7.82 years while it was 11.55, SD 6.12 years for nurses (p > 0.05). The overall response rate was 61.97% (61.98% physicians and 61.96% nurses, p > 0.05). There were more female participants than male participants (171 vs. 93, p < 0.05).

Table 1: Demographic data of participants

Variable	Physicians N=106	Nurses N=158	Overall N = 264
Age (Mean, SD) years	53.08, SD 7.35	35, SD 5.1	46.8, SD 10.95
Gender (number)			
Female	69	102	171
Male	37	56	93
Years of experience (Mean, SD)	11.92, SD 5.31	10.86, SD 7.82	11.55, SD 6.12

SD = Standard Deviation

The means composites were used to compare between groups. The mean composite is the mean of means. There were significant differences in a mean composite of knowledge and attitude between physicians and nurses (0.632, SD 0.18 vs 0.414, SD 0.13, p <0.05), (0.93, SD 0.27 vas 0.78, SD 0.39, p <0.05) but there was no difference in the importance of lifestyle pillars (3.75, SD 1.18 vs 3.87, SD 0.78 , p >0.05) (Table 2).

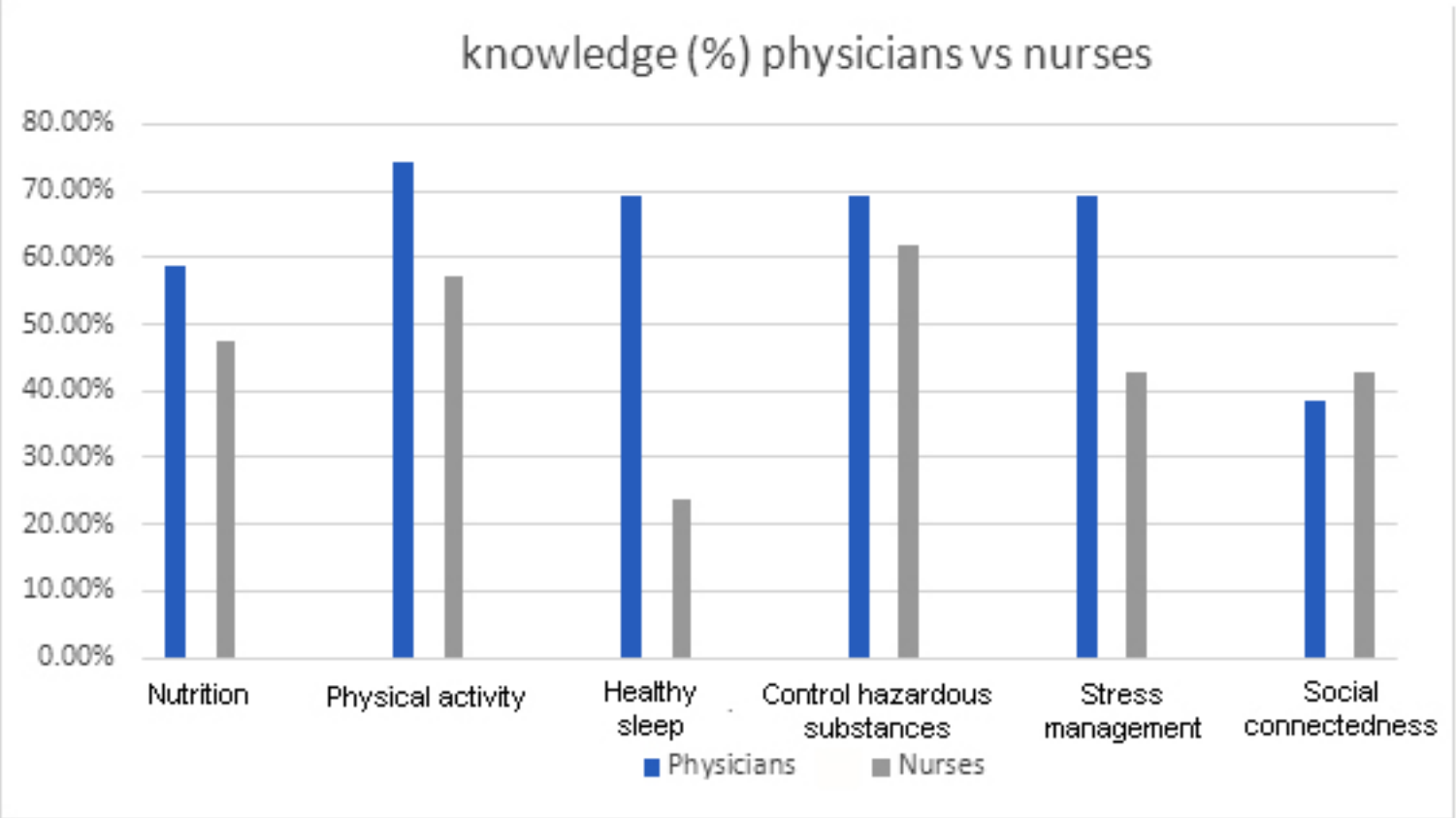
Table 2: Means composites; knowledge, attitude, and Importance of Lifestyle pillars

	Knowledge	Attitude	Importance
Physician (Mean, SD)	0.632, SD 0.18	0.93, SD 0.27	3.75, SD 1.18
Nurses (Mean, SD)	0.414, SD 0.13	0.78, SD 0.39	3.87, SD 0.78
Overall (Mean, SD)	0.523, SD 0.06	0.85, SD 0.11	3.77, SD 0.035
P value	<0.05	<0.05	>0.05

SD =Standard Deviation

Physicians and nurses showed differences in their level of knowledge through the lifestyle pillars (Figure 1).

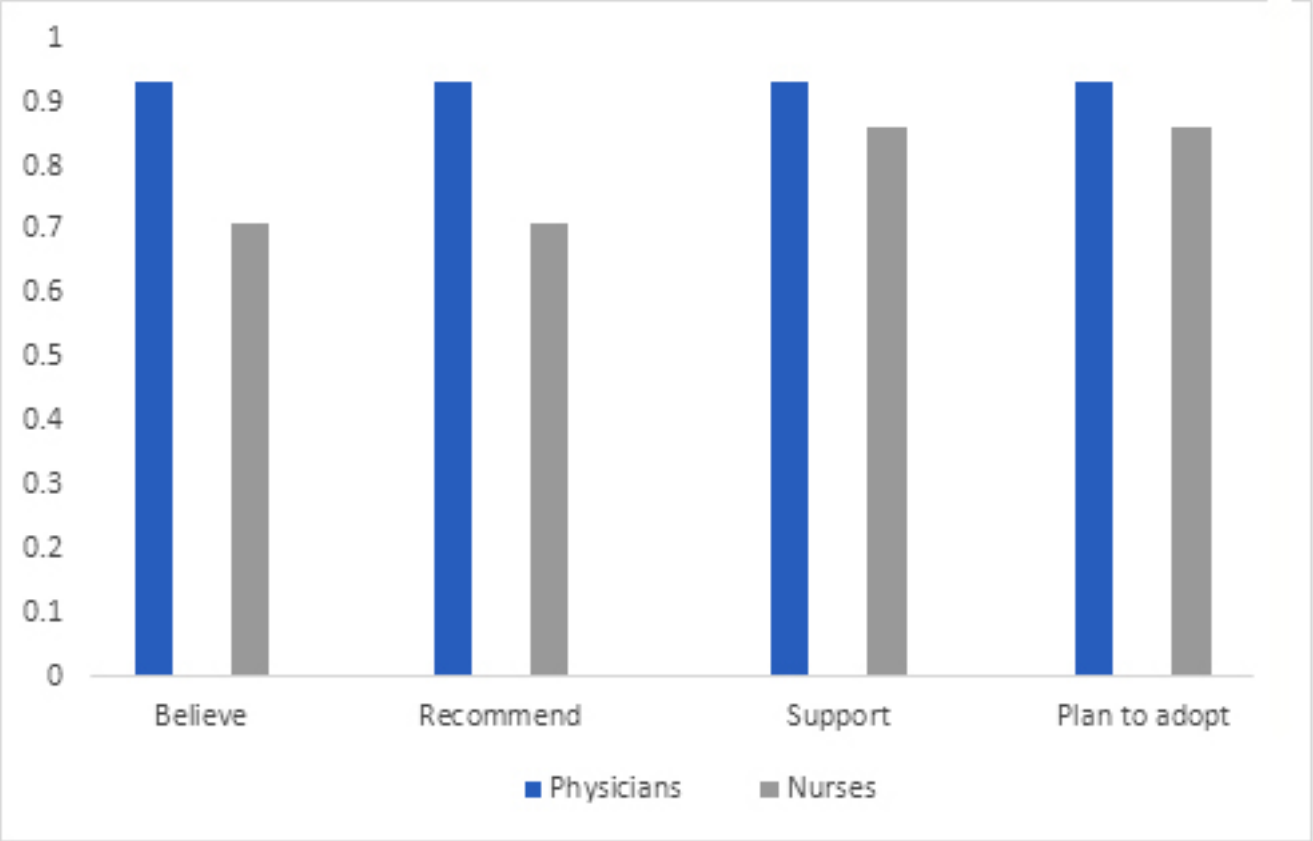
Figure 1: Means composite of knowledge in lifestyle medicine pillars (physicians vs nurses)



Physicians showed a high mean composite of knowledge in physical activity (74.35%) and lowest mean of knowledge in social connectedness (38.46%). Nutrition, healthy sleep, control hazardous substance and stress management means composite for physicians were 58.97%,69.23%,69.23% and 69.23 respectively. Nurses showed a high mean composite of knowledge in smoking cessation (61.9%), while they showed a lower mean composite of knowledge in social connectedness (42.86%). Nutrition, physical activity, healthy sleep, stress management means composites for nurses were 47.61%,57.14%,23.8% and 42.86% respectively. Although the mean composite of knowledge of social connectedness was the lowest in both groups, physicians, and nurses, it was better without significant statistical difference in nurses rather than physicians (42.86% vs. 38.46%, p> 0.05).

Both physicians and nurses showed a high attitude in lifestyle medicine. The attitude was subdivided into four domains: believe, recommend, support, and plan to adopt (Figure 2). The mean composite for attitude in the physicians' group was 0.93 SD 0.28 and for the nurses 'group 0.78 SD 0.11 (p <0.05). The attitude assessment was subdivided into believe, recommend, support and plan to adopt. Physicians scored 0.93 SD 0.28, 0.93 SD 0.28, 0.93 SD 0.28 and 0.93 SD 0.28 respectively. Nurses scored 0.71 SD 0.49, .71 SD 0.48, 0.86, SD 0.38 and 0.86, SD 0.38 respectively.

Figure 2: Comparison between attitude domains (physicians vs nurses)



Healthy nutrition was the first pillar in importance scale and social connectedness was the least pillar in importance (Table 3).

Table 3: Importance of lifestyle pillars

Rank	Pillar	% of participants
1st	Nutrition	65
2nd	Physical activity	50
3rd	Sleep	45
4th	Control hazardous substance	40
5th	Stress management	60
6th	Social connection	65

Low knowledge of social connectedness could explain the position of social connectedness in the ranking list. Social connectedness occupied the sixth pillar, close to stress management pillars.

Knowledge Means, age, and duration of work were correlated using Pearson correlation to detect any relation between knowledge means, age and duration of work. Pearson correlation was + 0.342 (positive, moderate correlation) with a significant difference ($p < 0.05$) for work duration. Pearson correlation was + 0.241 (positive and low correlation) with a significant difference ($p < 0.05$) for age. Both age and work duration were correlated with means of knowledge but with different degrees, while it is moderate for work duration, it is low for age. Each correlation was statistically significant ($p<0.05$).

Discussion

To the researcher's knowledge, this is the first study to assess knowledge, attitude, and ranking of lifestyle medicine pillars among physicians and nurses working in primary health care in Dubai Academic and Health Corporations. Extensive searching in primary and secondary search engines failed to find similar papers conducted in Dubai Academic and Health Corporation or the previous Dubai Health Authority.

The study results showed lower level of knowledge among nurses in comparison to physicians (knowledge mean composite 0.632, SD 0.18 vs 0.414, SD 0.13). This could be explained by the younger age of nurses (physicians 53.08 SD 7.35 years vs nurses 35 SD 5.1 years) and shorter years of work duration (physicians 11.92, SD 5.31 years vs nurses 10.86, SD 7.82) which reflected less level of experience in nurses than physicians. This was proven by the positive correlation of knowledge with age and duration of work. The bulk of nurses' work is technical with many procedures implementations through the day, with less academic activities to increase or maintain knowledge and skills. Different studies pointed to the lack of knowledge among nurses as barriers to implement lifestyle medicine in primary health care (37,38). Jansink et al (37) found lack of counselling skills and knowledge among tested nurses in their study. The included nurses were assessed in nutrition, physical activity, and smoking cessation counselling skills. Jansink et al (37) included only female nurses who were 65% in our study while 35% were male. More study recruiting matched female to male groups are needed to generalize outcome results.

Parker et al (38) studied the level of knowledge among health professionals working in South Africa regarding nutrition, physical activity, and smoking cessation. They found that physicians achieved an overall knowledge score of 70% SD 10 while nurses achieved a 60% SD 10. Our results showed a similar pattern: physicians get higher scores than nurses (63.2% SD18 vs 41.4% SD 13). Parker et al (38) studied different health care professionals' categories. They defined a nurse as a graduate-trained nurse who has passed a state registration examination and has been licensed to practice, and subclassified doctors into doctors and community service doctors. In contrast, in our study, healthcare professionals were defined as physicians and nurses who currently worked in primary healthcare. This basic variation could affect the comparison between results. Studies showed a deficiency in knowledge and skill in obesity, nutrition, and physical activity among primary care physicians (39), consistent with our results. However, the deficiency was more apparent among nurses than physicians. Aalto et al (40) reached the same conclusion when they studied the Primary health care nurses' and physicians' attitudes, knowledge, and beliefs regarding brief intervention for heavy drinkers. They found a similar gap in knowledge between physicians and nurses. Variations in the level of knowledge could be attributed to the curricula followed in medical and nursing colleges. Lack of training hindered implementation of lifestyle medicine in practice (41). Usually, nurses are the first point of contact in primary health care; variation in the level of knowledge between nurses and physicians could create uncertainty among patients about whether they are receiving the best possible care. Gledhill et al (42) found that variation in knowledge between physicians and nurses could lead to confusion among patients about the current management plan they received.

Although, the attitude was high in both groups, it is lower in nurses than physicians; this may show that the job category has influenced on the attitude. This finding can be explained by the level of knowledge and counselling skill, the lower the level the lower the attitude and vice versa.

The high ranking of healthy nutrition and physical activity was consistent with other studies (43). Bonnet et al. (43) found that 100% of their sample chose nutrition as the first pillar and 95% chose physical activity as the second. In our study, 65% chose nutrition as the first pillar and 50% chose physical activity as the second. This variation could be due to the nature of the sample. As in the Bonnet study, the sample is a small group of postgraduate medical students in a teaching environment (21 medical students). At the same time, in our study, they are a group of professionals working in a non-educational environment, and the risk of insufficient recalling of knowledge is high due to busy shifts.

Studies showed many barriers to training medical residents in counselling patients on obesity, nutrition, and physical activity (41) (44). Lack of knowledge and insufficient training were among these barriers (41)(44). Today's Residents are doctors of tomorrow, so teaching and training curriculums may need revision to close this gap (41). Insufficient training or poor healthcare providers' education has been cited by several studies as a significant barrier to incorporating lifestyle counselling into clinical practice (45). A group of researchers studied the 1356 final year medical students in seven UK universities through a questionnaire sent to them regarding knowledge and training in lifestyle medicine. Astonishing results appeared. Eighty percent (80%) stated that they did not receive any training in lifestyle medicine within the last two years, 76% wanted more lifestyle medicine teaching to be integrated in the medical school curriculum.

As with many studies, our study has some limitations. There were many female participants (171 female vs 93 male). Also, there were more nurses than physicians (158 nurses vs 106 physicians). There is a need for matching gender and occupation between categories to generalize the results. Family medicine speciality in Dubai is highly requested by female doctors and primary health care services recruited more female nurses than male, hence the number of females in both categories are more than males. The response rate (61.93%) was considered a strength for the study.

In conclusion, the results of the study showed the lack of knowledge particularly among nurses and the high attitude towards lifestyle medicine with no differences between nurses and physicians. There is a variation on ranking lifestyle medicine pillars between physicians and nurses. There was positive, moderate, and significant correlation between knowledge, age and positive, weak, and significant between means of knowledge and work duration. Future research and quality improvement projects (47) are recommended around lifestyle medicine implementation in Dubai Academic and Health Corporation – Primary health care.

Conflict of interest

The researcher is not aware of any conflicts of interest related to the subject of this study.

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