

Physician's Lifestyle Counseling Knowledge, Attitude, and Practice: A Basis for Lifestyle Medicine Continuing Medical Education (CME)

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Background: The close association of lifestyle with the pathogenesis of chronic diseases has been established since early times. Lifestyle medicine provides an evidence-based solution to the Non-communicable disease epidemic. However, physicians do not receive adequate training on lifestyle counseling and intervention in both undergraduate education and graduate medical training.

Objective: The aim of this study was to examine whether knowledge and attitude regarding lifestyle medicine and the Physicians' personal lifestyle practices will determine the presence or absence of lifestyle counseling in their medical practice.

Methods: An online survey questionnaire was formed and spread through the internet. The questionnaire consisted of four parts- demographics, physicians' personal lifestyle practices, their attitudes, and knowledge about Lifestyle Medicine. Ethical approval was granted.

Results: Out of 188 respondents, 81.4% were females with mean age ranging between 40-49 years. 49 (26.1%) were residents, 84 (44.7%) were Fellows and the remaining participants were Diplomates. 71.3% and 48.4% of respondents said that they include animal and plant food in their diet. The results regarding attitude and knowledge of the doctors of Lifestyle Medicine were mostly insignificant.

Conclusion: The study doesn't only provide information about the knowledge gap and lack of counseling skills but also highlights the urgent need for lifestyle medicine education programs for the new trainees as well as practicing physicians.

Key words: lifestyle, continuing education, nutrition, medical education

INTRODUCTION

The close association of lifestyle with the pathogenesis of chronic diseases has been established since early times.¹ Investigations on a plant-predominant diet² and active lifestyle³ were observed in a population where heart disease and hypertension are almost non-existent⁴ in contrast to a modern lifestyle of fast-food consumption and inactivity.⁵ With over 70% of deaths worldwide attributed to non-communicable diseases (NCDs) that are lifestyle-related⁶, renewed interest has emerged in lifestyle medicine education.

Lifestyle medicine (LM) provides an evidence-based solution to the NCD epidemic; however, lifestyle medicine education in medical curricula is minimal to non-existent.⁷ The current trend of public health

challenges is directed to socioeconomic variables⁶ as significant drivers that can move medical education to integrate LM in undergraduate medical education, graduate medical education, and continuing medical education.⁸ Substantive research in medical, social, and behavioral sciences has also identified the demand for improving education on lifestyle medicine intervention, including behavior change⁹ nutrition¹⁰ and physical activity counseling.¹¹

Like any developing country, health care providers in the Philippines are not equipped to implement lifestyle intervention as the primary approach to these chronic conditions despite the repeated emphasis on its role in the clinical practice guidelines. This gap is seemingly due to the long-overdue demand to address the inadequacy of lifestyle medicine education in the medical curricula resulting in poor skills and confidence among health care providers to deliver effective lifestyle intervention. Advancing the early initiatives in integrating lifestyle medicine across all levels of medical education through

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various initiated methodologies is therefore proposed as an essential intervention to address the inevitably growing burden. The primary initiatives in this effort showed positive outcomes. However, local research in this field is extremely limited to non-existent; thus, much work remains to be done.

The Philippines' NCD burden resulted in a significantly reduced economic output, as shown in the findings of the joint report of the United Nations Interagency Task Force on NCDs, the World Health Organization, and the Philippine Department of Health. The NCD burden in the country has gone up to an estimated cost of over PHP 750 billion (US\$ 14.5 billion) or about 4.8% of the national gross domestic product.⁶ Thus, highlighting the human and economic cost of the NCD burden warrants a highly cost-effective investment in lifestyle intervention packages and healthcare provider education to contribute to the country's overall socio-economic development. The recently published guidelines for chronic diseases unanimously showed increasing comprehensive emphasis on healthy behaviors and lifestyle therapy as the first line of intervention for the top killer diseases, including hypertension, atherosclerotic cardiovascular disease, hypertension, dyslipidemia, and diabetes. These recommendations consistently call for efficient implementation of lifestyle interventions for successful prevention and management outcomes.¹² The recent guideline published by the ACC and AHA recommends that the essential method to prevent ASCVD is for healthcare providers to provide lifestyle therapy as maintenance intervention throughout life.

The objective of this study was to examine whether knowledge and attitude regarding lifestyle medicine and the physicians' personal lifestyle practices are factors that may determine the presence or absence of integration of lifestyle medicine in their medical practice. Furthermore, this study specifically aims to show the existing gap in the integration of lifestyle medicine competencies in medical education programs; as an intervention to address the inevitable epidemiological transition and socioeconomic loss.

METHODS

To achieve the goal and objectives of this study, a quantitative descriptive cross-sectional design was utilized. Simple random sampling method was done. The researcher took a subset portion from a population to represent the entire data, wherein each member of the population had an equal probability of being chosen.

Out of the targeted population, the researcher selected 188 respondents for the study according to the following criteria: 1. Licensed physicians, and 2. Active in clinical practice. Those who refused to sign the consent and were inactive in clinical practice were excluded from the study.

A questionnaire was designed by the researcher based on the review of related literature. It went through content validation by at least six experts in the field. The questionnaire had four parts. The first part covered the demographic profile of the respondents and general questions. The second and third parts of the questionnaire measured the level of the respondents' knowledge and attitude regarding lifestyle medicine, wherein the response options were "True" or "False" for knowledge and a Likert scale for attitude. The fourth part measured

the respondents' lifestyle medicine personal practices. The choices were presented on a Likert scale which were answered by "always", "often", "rarely" and "never". Interpretation was based on the frequency of the practices.

The cross-sectional data were gathered through an online survey. The possible respondents were chosen via random sampling from a list of all licensed physicians under the Philippine Regulation Commission, obtained by requiring the license number of the respondent. During data gathering, the respondent received a consent form wherein the researcher's name and the purpose of the survey were explained. Confidentiality was maintained at all costs.

SPSS version 24 (IBM, Armonk, New York, USA) was used for data analysis. The analysis was performed in two parts. First, descriptive statistics (frequencies) were used to describe the demographic details of the respondents (Gender, current training level, marital status, the field of practice, etc.). Second, Pearson's chi-square test was performed, to determine the association between qualitative (independent and dependent) variables.

Prior to the implementation, approval for this study was obtained from the Research Committee of the Antique Medical Center. This means that the research proposal, consent form, and instrument of the researcher underwent evaluation from the Research Committee to ensure that the principles of ethical research were observed.

RESULTS

Demographics

The data of a total of 188 respondents- who were actively seeing the patients- were analyzed in depth. Out of the total, 153 (81.4%) were females, with 131 (70%) married respondents the mean age was between the range of 40-49 years or 44 years. On asking about the status of medical practice, it was found that 49 (26.1%) were Residents, 84 (44.7%) were Fellows at the time of data collection and the remaining participants were Diplomate. In the data collection process, responses from Pediatricians, Family and Community Medicine doctors, Internal Medicine doctors, Gynecological Physicians, etc. were collected to ensure the diversity of the answers from all the major fields. Personal health concerns were also asked from the doctors, 29 (15.4%) reported hypertension, 39 (20.7%) complained of dyslipidemia, 26 (13.8%) and 19 (10.2%) confirmed obesity and diabetes problems. A very positive response 157 (83.5%) was seen upon asking about their interest in joining the CME activities in LM (Lifestyle Medicine).

Personal LM Practices

Overall, 71.3% of participants responded that they always or often include animal food (meat, chicken, fish, egg, etc.) in their diets (Figure 1a) while only 48.4% of physicians always or often include plant food (whole grains, vegetables, fruits, nuts, etc.) in their diets (Figure 1b). The graphs also show that healthy people- with a BMI value of 2.00 (normal weight)- who never include animal-based food followed by those who use more plant-based foods in their daily diet. This is an important evaluation as many studies in the past have proven that

the health care routines followed by physicians have similarities with the routines of their patients regardless of the dietary approaches.^{13,14} Moreover, it was also observed that when the physicians expressed their own diets during the counseling sessions, it felt more motivational to the patients.¹⁵

Upon further questioning about the participants' personal LM practices, it was observed that only 42% were getting a good quality of sleep (at least 8 hours, 5 times a week), 60% were able to always or often engage themselves in moderate-intensity exercises for 30 minutes a day. 79% of the physicians complained that they were always or often stressed due to workload, 10% confirmed that they smoke cigarettes, while 55.3% of respondents confirmed that they

always or often spend at least 15 minutes counseling patients about diet and lifestyle changes to prevent non-communicable disease in their routine medical practice.

Attitudes

Only 55.8% of physicians agreed or strongly agreed that they were adequately trained to implement a structured nutrition assessment and prescription for patients. Only 42.0% agreed or strongly agreed that they were trained to implement a physical activity assessment and prescription for their patients. Similarly, 40.4%, 35.6%, 38.3% and 54.8% of doctors were confident enough to provide structured sleep,

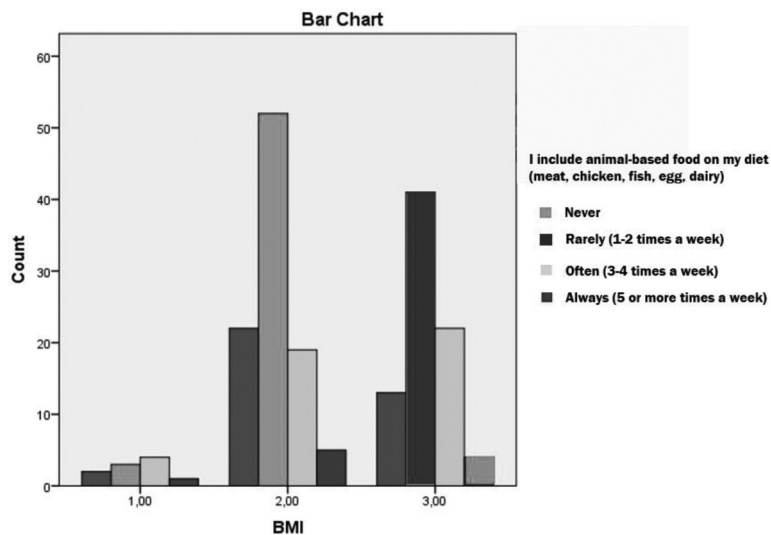


Figure 1a; compares the BMI with the animal food-based diet, where 1.00= underweight, 2.00 = normal weight, 3.00= overweight. p=0.59

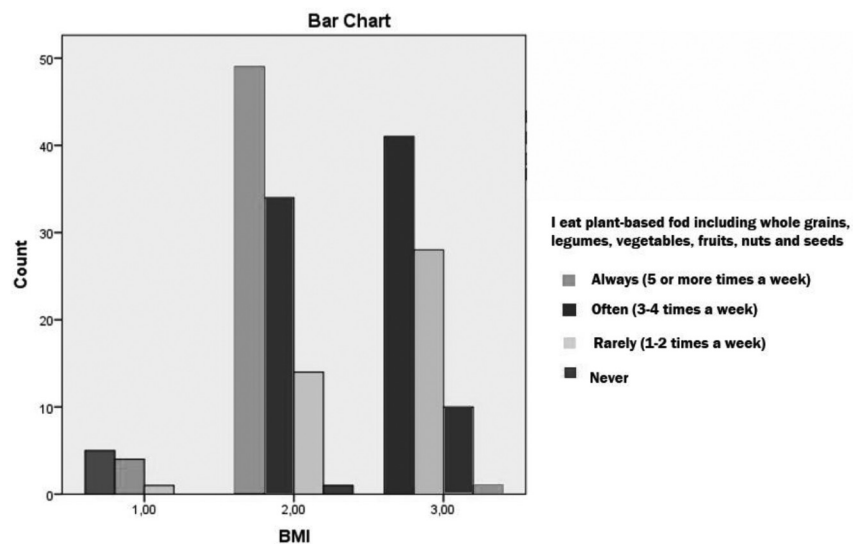


Figure 1b; compares the BMI with the plant food-based diet, where 1.00= underweight, 2.00= normal weight, 3.00= overweight. P=0.99

stress reduction, substance use (smoking, alcohol, etc.), and structured and sustainable lifestyle counseling to their patients on the basis of their training. Table 1 shows the comparison of the doctors' attitudes about LM with their current status of training, i.e. Resident, Fellow, Diplomate, and their p-values.

Knowledge

A total of 14 knowledge-based questions were included in the basic questionnaire to test the knowledge of the participating physicians. On average, about 80% of the respondents knew that lifestyle counseling should be implemented in patients with Heart disease, pre-diabetes and diabetes, hypertension, metabolic syndrome, dyslipidemia, cancer, stroke, and obesity according to the published clinical guidelines. Similarly, 82% knew that nutrition and exercise counseling have the Class of Recommendation (COR) I for most chronic conditions, including heart disease and hypertension. 78.7% agreed with the fact that whole food, plant-based diets are optimal recommendations for chronic conditions according to practice guidelines, while 71.3% of doctors knew that vegan diets have been demonstrated to reduce cardiovascular events in randomized controlled trials. More than 75% of the physicians agreed that the Mediterranean diet decreases the risk for CVDs. Surprisingly, only 67% of respondents knew that olive oil and avocado are foods known as sources of monounsaturated fat and 53.7% knew that saturated fat is a dietary component found to be most responsible for increasing the serum cholesterol level. Almost everyone (87.2%) agreed that individuals who increase their intake of soluble fiber can decrease their LDL-cholesterol level. Interestingly, 77% of physicians knew that a high intake of trans fatty acids has shown to increase the serum cholesterol level by increasing LDL-c and decreasing HDL. Around 60% answered "true" to the fact "The American College of Sports Medicine details a system of risk stratification that help guide physicians in making assessment and exercise prescription. The guideline states that men of age 45 or less, with no symptoms of cardiovascular disease, can be cleared for low, moderate, and vigorous-

intensity exercise". More than three quarters (75.5%) remembered that the general exercise prescription guidelines include FITT which could be written as: Frequency: 5 days/week, Intensity: 40-59% HRR (heart rate reserve), Time: 30-60 minutes daily, Type: Rhythmic aerobic exercise involving large muscle groups, 70.7% had known the fact that Individuals who lack sleep have been found as trigger which increases the level of ghrelin and decreases leptin leading to increased hunger and appetite. 72% and 85% agreed with the fact "common effects of stress on behavior includes using tobacco and/or abusing drugs or alcohol, engaging in outbursts of anger, exercising less frequently, withdrawing socially" and "a coach-like approach is a conversation used in lifestyle counseling assist patients to help themselves, build motivation, confidence, and engagement, relies on patient self-awareness and insights, strives to help patients find their own answers, focuses of what is working well, collaborates, relies on skills and knowledge of expert". Table 2 shows the comparison between the knowledge-based facts and the current training level of the physicians.

DISCUSSION

Unlike other studies on the same topic, this study provides a detailed and structured survey and analysis of the counseling knowledge, attitude, and practices of the physicians. The knowledge sub-section of the survey was given immense importance because of the fact that the lifestyle counseling of the patients depends totally on the knowledge of their doctors. A study by Elke A. Trautwein, et al.¹⁶ shows that 76% of the time when patients see their doctors, they ask about their 'diet and lifestyle advice. This shows the dependency of the patients on their doctors regarding the topic.

The objective behind comparing the physicians' knowledge with their current training level (Table 2) was to understand as to what extent does experience matters in the field, the trend of the results, and the insignificance of the results provides a clear answer that prior knowledge is necessary and the experience does not help much if there

Table 1. Physicians attitude about LM (in percentage).

	Resident	Fellow	Diplomate	p-value
I am adequately trained to implement a structured nutrition assessment and prescription to patients.	51	54.8	61.8	0.58
I am adequately trained to implement a physical activity assessment and prescription for my patients.	42.9	35.7	50.9	0.54
I am adequately trained to implement structured sleep health counseling for my patients.	38.8	31	56.4	0.02
I am adequately trained to implement structured stress reduction counseling for my patients.	30.6	28.6	50.9	0.02
I am adequately trained to implement substance use (smoking, alcohol, other substances) counseling for my patients.	42.9	26.1	52.7	0.02
I am effective in providing carefully structured and sustainable lifestyle counseling to my patients in my clinical practice	57.1	52.4	56.4	0.99

Table 2. : Physician knowledge (in percentage).

	Resident	Fellow	Diplomate	p-value
According to published clinical guidelines, lifestyle counseling should be implemented in patients with heart disease, pre-diabetes and diabetes, hypertension, metabolic syndrome, dyslipidemia, cancer, stroke, and obesity [true] .	69.3	80.9	87.3	0.07
Nutrition and exercise counseling has Class of Recommendation (COR) I for most chronic conditions, including heart disease and hypertension [true] .	77.6	78.6	90.9	0.11
Whole food, plant-based diets are optimal recommendations for chronic conditions according to practice guidelines [true] .	69.4	77.4	89.1	0.04
Vegan diets have been demonstrated to reduce cardiovascular events in randomized controlled trials [true]	73.5	69	72.7	0.82
The Mediterranean diet decreases the risk for cardiovascular disease according to studies, which includes vegetables and focuses on a reduction in total fat intake [true] .	83.7	65.5	89.1	0.002
Olive oil and avocado are foods known as sources of monounsaturated fat [true]	57.1	71.4	69.1	0.22
Studies show that individuals who increase their intake of soluble fiber can decrease their LDL- cholesterol level [true] .	77.6	94	85.5	0.02
Saturated fat is a dietary component found to be most responsible for increasing the serum cholesterol level [true] .	46.9	58.3	52.7	0.43
High intake of trans fatty acids has shown to increase the serum cholesterol level by increasing LDL-c and decreasing HDL [true]	71.4	79.8	78.2	0.53
The American College of Sports Medicine details a system of risk stratification that helps guide physicians in making assessment and exercise prescription. The guideline states that men of age 45 or less, with no symptoms of cardiovascular disease can be cleared for low, moderate, and vigorous-intensity exercise [true] .	55.1	63.1	54.5	0.51
The general exercise prescription guidelines include FITT which could be written as: Frequency: 5 days/week, Intensity: 40-59% HRR (heart rate reserve), Time: 30-60 minutes daily, Type: Rhythmic aerobic exercise involving large muscle groups [true] .	79.6	73.8	74.5	0.74
Individuals who lack sleep have been found to trigger which increases the level of ghrelin and decreases leptin leading to increased hunger and appetite [true] .	24.1	29.8	32.7	0.64
Common effects of stress on behavior include using tobacco and/or abusing drugs or alcohol, engaging in outbursts of anger, exercising less frequently, Withdrawing socially. [true]	75.5	64.3	81.8	0.06
A coach-like approach is a conversation used in lifestyle counseling to assist patients to help themselves, Build motivation, confidence, and engagement, Relies on patient self-awareness and insights, Strives to help patients find their own answers, Focuses of what is working well, Collaborates, Relies on skills and knowledge of an expert. [true]	81.6	84.5	89.1	0.55

is a prior knowledge gap. A study by Nikole Harkin¹⁷ shows a similar insignificance in results (Table 1).

In an urge to understand the attitudes and the practices of the physicians regarding healthy life in their own life, this study adds

a detailed analysis to the already present literature. Focusing on the percentages in the attitude sub-section, this study clearly signifies the area which needs to be worked on. Looking at table 1, it is clear that the physicians in this survey lack the skills and training of counseling

the patients on different Lifestyle medicine-related topics. This can be overcome by initiating training programs on lifestyle medicine. Continuing medical education (CME) presents opportunities that aim to fill this gap in lifestyle medicine education.¹⁷

The American College of Lifestyle Medicine competency-based Lifestyle Medicine course¹⁸ and the Institute of Lifestyle Medicine¹⁹ provide lifestyle medicine courses worldwide and are offering the guidance for trainees in practicing lifestyle medicine. The Philippine College of Lifestyle Medicine also leads in the provision of training and CME programs for practicing physicians in Asia.

The current study is a single-centered study, which restricts it from providing a diversified analysis from more than one center. Furthermore, the respondents' count has been restricted to the average, ensuring the quality of analysis is preserved and the risk of bias is minimal, however, this can also be considered a limitation of the study. A thorough literature search at every stage, designing the questionnaire and reviewing it repeatedly by the researcher, ensuring the complete randomization during the process of data collection, ensuring a quality analysis of SPSS is a strength of this study because it limits the chances of error to a reasonable extent.

CONCLUSION AND RECOMMENDATIONS

The study doesn't only provide information about the knowledge gap and lack of lifestyle modification counseling skills but also highlights the urgent need for training programs and CME-related activities for trainees and practicing physicians. It also provides information about some worldwide LM-related courses that most physicians might not know about.

Further similar surveys are required to be done in different parts of the world to enlighten the worldwide necessity of understanding and addressing the lifestyle-related counseling gap for both physicians and patients.

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