Original Article

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING VITAMIN D AMONG STUDENTS OF SAIDU MEDICAL COLLEGE, SWAT

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Vitamin D is essential and beneficial for strong, healthy bones and for overall health. It also improves the immune system to fight against infections. It helps in the absorption of calcium and phosphorous from the digestive system and helps in mineralization of bones. The importance of Vitamin D has been proved by researchers and some of the functions of Vitamin D are as follows:

1. Anti-cancer effect
2. Improves the immune system to fight against infection
3. Improves the circulation and cardiovascular health
4. Important for the keeping lungs and airways healthy
5. Beneficial role in brain development
6. Improves muscle functions

The studies indicate that the patients suffering from autoimmune diseases have low levels of Vitamin D which increases the chance of developing autoimmune diseases.

Clothing can hinder Vitamin D synthesis from sun but only in those persons who cover themselves from

head to toe. In a study carried out by Diehl and Chiu, it was found that sun exposure causes cancer and use of sunscreen is essential for protection.

Around one billion people are suffering from Vitamin D deficiency globally and Pakistan is suffering from double burden of disease in the form of communicable and non-communicable diseases. Although many studies have shown the importance of Vitamin D, there is lack of positive attitude towards sunshine exposure and healthy dietary practices. The deficiency of Vitamin D is present all over the world but is much more prevalent in the sunny South Asia. The knowledge gap in health professionals and the people is the hurdle in the vitamin D deficiency prevention.

The aim of the study was to assess the knowledge, attitude and practices of future physicians as it would help in deciding if there would be a need to run an awareness program about sunshine exposure and dietary practices of Vitamin D.

Methodology

This descriptive cross sectional study was conducted in district Swat from April to June 2016. The medical students of Saidu Medical College were taken as

target population. Sample size was estimated on the basis of the expected 50% prevalence of knowledge Vitamin D (P) and 10% margin of error by using the formula:

$N = P(1-P) / Z^2 \cdot e$, $Z=1.96$, $P=50\%$, $e=0.1$ as 10% margin of error. Sample size = 96, 10% of inflation so final sample size is 106. The sample size was calculated and 106 students were selected by simpler random sampling technique. The students studying in Saidu medical college willing to participate, the students of forth and final year were included and those who were absent or not given consent were excluded. The list of the students of forth year and final year was obtained and they were randomly selected. In the selected students who were not present than I selected next student to that person. Selected students were contacted in their free time or in break, the questionnaires were given to the students and were requested to fill it. The selected students were then contacted in their free time and pre-structured questionnaires were given to them to fill. The response rate was good but two students were excluded as they did not complete their questionnaire so results of 104 students are discussed here.

The questionnaire was adopted from an Indian study done by Arora H, Dixit V, Srivastava N with the Title "Evaluation of Knowledge, Practices of Vitamin D and attitude towards Sunlight among Indian Students".

The first structured questionnaire was to assess knowledge, attitude and sunshine practices and comprised of 4 sections. Section A was about socio-demographic profiles of the student. Section B was to evaluate the knowledge regarding Vitamin D, which contained 7 questions. For example, "Have you heard about Vitamin D?", "What is the main source of Vitamin D?", "What is the average time needed to be in sunlight to have enough Vitamin D levels?" etc. The first question in section B was for the purpose of screening. Those who had heard about Vitamin D were required to complete the rest of the questionnaire.

Section C and D were about attitude and practice towards sunlight exposure and dietary products which contain vitamin D. Section C consisted of questions on participants' fear, such as being tanned (color change into brown) by sunlight exposure and the possibility of developing skin cancer, and concerns about their Vitamin D levels. In this section, participants were also asked about the use of sun protection items such as sunscreen cream/lotions, umbrella, and involvement in any outdoor physical activity.

To assess the dietary intake, the food frequency questionnaire was used and only those foods were selected which contain Vitamin D naturally. These food items were selected from the list of USDA National Nutrient Database for Standard Reference Release 28. The amount of Vitamin D was in

International units (IU). The USDA National Nutrition Database was used instead of Food composition table of Pakistan 2001 because it does not have the Vitamin D containing food list and quantity.

The questionnaires were administrated under direct supervision of researcher so that discussion among students regarding questions and use of any kind of prompts such as the mobile internet can be avoided. It was pretested in Federal Medical and Dental College. The collected data was entered and analyzed in SPSS version 20.

The ethical approval was obtained from internal review board of Health Services Academy, Islamabad. Written informed consent was obtained from the participant before filling the questionnaire.

Results

Most of the students were male that is 68(65.4%) and 36(34.6%) were female. In the target population 66(63.5%) respondents were 20-24 years old and 38(36.5%) were of 25-29 years old. The majority of the respondents, 73(70.2%), were living in the rural areas and only 31 (29.8%) were living in the urban areas. The fourth year MBBS students were 53(51%) and 51(49%) were final year MBBS students. Most of the respondent's family income was more than 50,000, 90(86.5%) and those who had a family income of up to 40,000-50,000 were 13(12.5%) and only 1(1.0%) of the respondent's family income was 30,000-40,000 per month.

Table 1: Knowledge Regarding Vitamin D

Questions	Frequency (N=104)	Percentage
Have you heard about vitamin D?	104	100%
Is Vitamin D synthesized in the body?	104	100%
Which is the main source of Vitamin D?	91	87.5%
Is Vitamin D good for bone health?	102	98.1%
What is the minimum daily intake of Vitamin D for an adult?	97	93.3%
Which time of the day is good to be in sunlight?	57	54.8%
How much time a person should spend outdoor to have enough Vitamin D in summer?	57	54.8%

Knowledge scoring; there were seven questions about knowledge and the total score was seven. The minimum score of knowledge was four and the maximum possible score was 7 with the mean 5.88 and standard deviation was 0.71. Knowledge grouping; It was found by the researcher that 75(72.1%) of the respondents had good knowledge regarding Vitamin D and 29(27.9%) had poor knowledge about Vitamin D. Overall, majority had good knowledge about Vitamin D. Attitude regarding Vitamin D

Percentages of the respondents by attitude towards Vitamin D; the majority respondents 92(88.5%) liked to go in sun for some time and 12(11.5%) liked to go in sun often. A total of 65(62.5%) of the students disagreed, 31(29.8%) agreed and 8(7.7%) strongly agreed that the exposure to sunlight is harmful for the skin. Among the respondents, 85(81.7%) answered never, 18(17.3%) sometime and 1(1.0%) often used parasol (Sunshade or Umbrella) to shade from the Sun. 46(44.2%) disagreed, 36(34.6%) agreed and 22(21.2%) strongly agreed that the sunscreens are the most effective way of controlling skin tanning. Among them 68(65.4%) responded that their Vitamin D status is Sufficient and 36(34.6%) answered Neutral that their Vitamin D status may be sufficient/deficient. Among participants, 90(86.5%) strongly agreed and 14(13.5 %) agreed that if a medical condition demanded for the test of Vitamin D they will go for it. Ninety nine (95.2%) of respondents strongly agreed and 5(4.8%) agreed that taking Vitamin D supplements reduces the risk of Vitamin D deficiency. Among them 85(81.7%) strongly agreed, 16(15.4%) agreed and 3(2.9%) disagreed that taking Calcium (Ca) supplement helps in maintaining Vitamin D levels in the body.

Practices regarding Vitamin D

In the survey questionnaire, there were some questions regarding vitamin D Practice. It has been shown that 62(59.6%) of the respondents used sunscreens in the summer season, only 3(2.9%) used it in winters and 39(37.5%) did not use sunscreens. When they were asked that how often they used sunscreens, 39(37.5%) had never used sunscreen, 23(22.1%) used sunscreen only they were playing in the sun, 21(20.2%) used sunscreen only once a day, 18(17.3%) did not use sunscreens regularly and 3(2.9%) of the respondents replied that they used sunscreens twice a day.. 25(24%) of the respondents said that it would be better to check sun protection factor (SPF) level when purchasing and 39(37.5%)replied that it is not better to check sun protection factor (SPF) while purchasing and 40(38.5%)of the respondents answered back that they were not using sunscreens. 17(16.3%) of respondents said that they were taking multivitamin supplements and 87(83.7%) were not taking any multivitamin supplements. Only 6.7% of respondents exposed their face, while 82.7% exposed both their face and arms and 10.6% exposed their face, arms and half legs during outdoor activities.

Vitamin D Specific food Practices Score

The Vitamin D specific foods practice was scored by calculating the population mean. The respondents were asked about the frequency of intake of three Vitamin D containing foods, for example, fish, egg and beef liver. The population mean of Vitamin D specific food practices was 25.9. The maximum was 82 and minimum was .00 with the standard deviation of 16.2.

Table : Vitamin D specific food Practice Grouping

Dietary Practices	Frequency Percentage) N (%)
Good Vitamin D Specific food Practice	36 (35)
Poor Vitamin D Specific food Practices	68 (65)
Total = Max = 2, Min =1, Mean =1.34, S.D =.47	104 (100)

Discussion

This was a cross-sectional study conducted in Saidu Medical College, Saidu Sharif; district Swat, Khyber Pakhtunkhwa, Pakistan. Saidu Sharif is near the main city of Mingora. The students of fourth and final year MBBS of Saidu Medical College were included in the study to assess the knowledge, attitude and practices and dietary practices regarding Vitamin D. Being the future medical practitioners, they would be diagnosing and treating the people, so assessment of their knowledge, attitude and practices would help us decides if there would be a need to run an awareness program about sunshine and dietary practices of vitamin D. In this study, majority of the respondents were male as compared to females. Different findings were found in a study conducted by Arora and Dixit, where the majority of participants were females . The observed difference could have been due to different area and different culture. In KPK, males are preferred over females to get education so this might have been the reason of higher ratio of male to female.

In this study and the one conducted in India by Arora and Dixit, the majority of the respondents were between the ages of 20-24 years. . The similarity was observed due to the fact that all the participants were students in both studies. There was a balanced distribution in the educational level as all of the participants were medical students and belonged to middle income families with more than Rs: 50,000 monthly family incomes. Similar findings were reported in the study conducted by Arora and Dixit in India . This similarity in both studies was due to similar economic conditions and similar education system of the countries, where poor cannot afford the fees of higher educational institutions.

In this study, all students had knowledge about Vitamin D and about its synthesis in the body; similar results were reported in other studies . In all the studies, the study population was medical students so it could have been the reason for their good level of knowledge about Vitamin D. In some other studies the students had limited knowledge'- and this difference might have been due to different institute, location and

difference in educational system.

The majority of the students knew that sunlight is the main source of Vitamin D, the peak UVB time of the day and time needed to be in sunlight for Vitamin D. Despite being aware, they disliked to be in sunlight. These study findings are comparable with other studies. The reason behind disliking to be in sunlight (sun exposure) could have been tanning of skin color. The majority of students were aware that Vitamin D is good for bones health and the same result were presented in the study conducted in India by Arora and Dixit and it may be because of literate participant selection.

Most of the students were aware about the minimum daily intake of Vitamin D, that is 600 IU, but did not consume Vitamin D rich foods and did not use Vitamin D supplements to have sufficient levels of Vitamin D. The reason of not consuming Vitamin D rich foods was the limited dietary sources.

Conclusion

The findings of present survey suggests that high percentage of students had good knowledge about sources of Vitamin D. Our findings were different in terms of knowledge about time needed to be in sun and the daily intake of Vitamin D and it might have been due to study setting. The study participants did not have positive attitude regarding sunlight exposure. The majority of the students did not like to be in sun and while going in sun they used sunshades such as scarf, umbrella etc. In this study, the consistency among knowledge and attitude of students was observed but the majority of the students were using sunscreens only during the summer season, the tanning of skin was found to be the reason for less exposure in the sun.

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