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Knowledge, Attitude And Practice Towards Vitamin D Among Second Year Medical Students In Udaipur – An Observational Study

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KEY WORDS –Vitamin D deficiency, Knowledge, Attitude, Sunlight exposure, Vitamin D sources

INTRODUCTION –

Vitamin D, an essential fat-soluble nutrient, is synthesized in the epidermis upon exposure to UVB sunlight or obtained from dietary sources such as oily fish, egg yolks, veal, beef, liver, and sun-dried mushrooms. The serum concentration of 25-hydroxyvitamin D (25(OH)D) is widely regarded as the most reliable marker of vitamin D status, reflecting both endogenous production and dietary intake. Although there is ongoing debate regarding optimal 25(OH)D levels, a serum concentration below 25 nmol/L is generally considered indicative of vitamin D deficiency. In our study we included second year students as Second-year medical students have typically completed basic science courses, including physiology, biochemistry, and nutrition, providing them with foundational knowledge about vitamins and their physiological roles. This makes them an ideal population to evaluate the translation of theoretical knowledge into practical behaviour. As future healthcare professionals, these students will play a critical role in educating patients about nutrition and lifestyle interventions. Understanding their current knowledge and attitudes toward vitamin D can help identify gaps in their education that might impact their future practice. Second-year medical students are still early in their medical training, meaning interventions based on study findings (e.g., educational programs) can
influence their attitudes and practices before these habits become ingrained. Medical students often serve as informal educators to peers, family, and friends. By identifying their knowledge gaps, this study can enhance their capacity to promote awareness about vitamin D among their social and professional circles.

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MATERIAL AND METHODS –

The present study is hospital based cross sectional study conducted in Pacific Medical College and Hospital, Udaipur. This study included second year students by circulating self-made semi structured questionnaire via social media after achieving ethical permission from the institution. On the basis of available previous literature, a self-designed questionnaire constituting 77 questions were developed. The questionnaire comprises of informed consent form and Knowledge, Attitude and Practice based questions. Before conducting the study, a pilot study was conducted to prevalidated the questionnaire, changes were applied according to the responses wherever needed. To conduct the study prevalidated self-made semi structured questionnaire was circulated among the study population through class representatives and volunteers. A week's time frame was given to the responders to submit the questionnaire.

Scoring Method

Client satisfaction questionnaire is prepared using 5 point Likert scale ranging from Very Poor (1) to Very Good (5)

Five - point numerical scales ranging from Very poor to Very Good were used. Weights assigned are given as under:

- Very Good 5
- Good 4
- Satisfactory 3
- Poor 2
- Very Poor 1

STATISTICAL ANALYSIS

Data was entered in Microsoft excel and was analysed using Statistical Package for the Social Sciences (SPSS)ver. 21. For qualitative data, percentage and frequency were calculated and Chi square test was used for association between two attributes, and for quantitative data mean, SD were calculated and 't', ANOVA test were used for statistical significance. P value of less than 0.05 was considered significant.

RESULTS –

TABLE -1 GENDER WISE DISTRIBUTION OF ALL PARTICIPANTS

GENDER	TOTAL	PERCENTAGE (%)
MALE	76	54.29
FEMALE	64	45.71
TOTAL	140	100.00

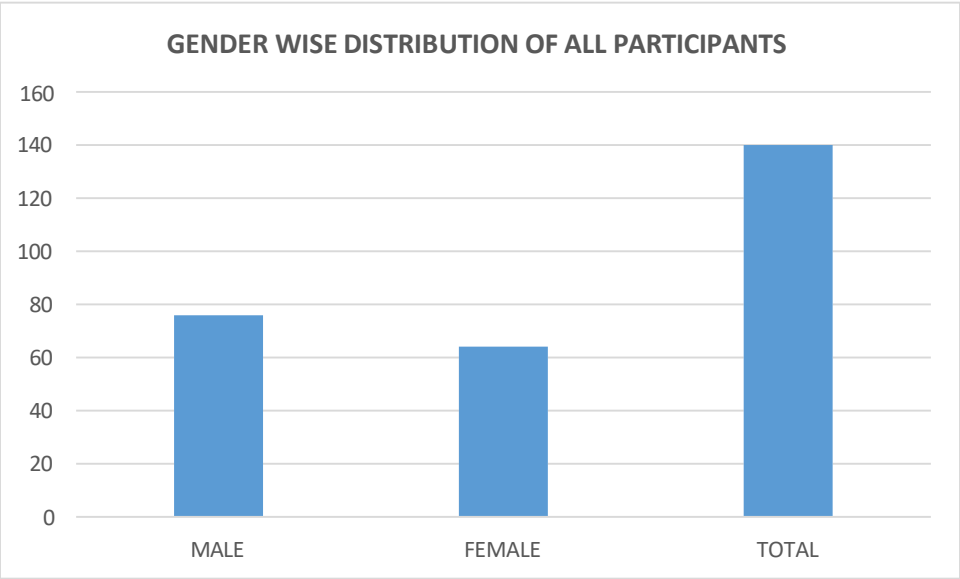

TABLE -2 DISTRIBUTION OF PARTICIPANTS ACCORDING TO GENDER AND URBANIZATION STATUS

HOME	MALE(%)	FEMALE (%)	TOTAL (%)
URBAN	38(50)	38(59.38)	76(54.29)
RURAL	38(50)	26(40.62)	64(45.71)
TOTAL	76(100)	64(100)	140(100)

TABLE -3 DISTRIBUTION OF PARTICIPANTS ACCORDING TO VEGETARIAN AND NON VEGETARIAN

	VEG (%)	NON VEG (%)	TOTAL (%)
MBBS II YEAR	124 (72.94)	16 (9.41)	140 (100)

TABLE -4 DISTRIBUTION OF PARTICIPANTS ACCORDING TO GENDER AND THEIR RESIDENCE

RESIDENCE	MALE(%)	FEMALE(%)	TOTAL(%)
DAYSCHOLARS	20(26.32)	29(45.31)	49(35)
HOSTELITE	56(73.68)	35(54.69)	91(65)
TOTAL	76(100)	64(100)	140(100)

TABLE -5 DISTRIBUTION OF PARTICIPANTS ACCORDING TO HABIT

YEAR	ALCOHOL (%)	SMOKING(%)	TOBACCO USER(%)	NONE(%)	TOTAL (%)
SECOND	27 (15.88)	29 (17.06)	5 (2.94)	79 (46.47)	140 (100

TABLE -6 DISTRIBUTION OF PARTICIPANTS ACCORDING TO FAST FOOD CONSUMING HABIT

YEAR	DAILY (%)	WEEKLY (%)	ONCE IN A MONTH (%)	OCCASIONALLY (%)	TOTAL (%)
SECOND	1 (0.59)	40 (23.53)	42 (24.71)	57 (33.53)	140 (100)

TABLE -7 DISTRIBUTION AND COMPARISON OF MEAN SCORE OF KNOWLEDGE, ATTITUDE AND PRACTICE AMONG SECOND YEAR MBBS STUDENTS

MEAN SCORE	EDUCATIONAL QUALIFICATION	P VALUE
	SECOND YEAR	
KNOWLEDGE	18.09±3.10	<.05
ATTITUDE	16.89±3.00	<.05
PRACTICE	10.36±3.22	<.05

TABLE -8 PERCENTAGE OF ADEQUATE AND INADEQUATE KNOWLEDGE AMONG SECOND YEAR STUDENTS

MBBS YEAR	EXCELLENT (%)	GOOD (%)	INADEQUATE (%)	TOTAL (%)
SECOND	27(33.33)	86(38.22)	27(28.12)	140(34.82)

TABLE -9 PERCENTAGE OF POSITIVE AND NEGATIVE ATTITUDE AMONG SECOND, YEAR STUDENTS

MBBS YEAR	POSITIVE ATTITUDE (%)	NEGATIVE ATTITUDE (%)	TOTAL (%)
SECOND YEAR	71(50.71)	69(49.28)	140(34.82)

TABLE -10 COMPARISON OF MEAN SCORE OF ATTITUDE AMONG SECOND YEAR

YEAR	POSITIVE	NEGATIVE	P value
SECOND	19.25±1.86	14.46±1.76	<.05

TABLE -11 COMPARISON OF MEAN SCORE OF PRACTICE AMONG SECOND YEAR STUDENTS

MBBS YEAR	EXCELLENT	GOOD	POOR	P VALUE
SECOND	15.12±0.47	12.43±0.91	7.42±2.76	<.05

TABLE -12 PERCENTAGE OF GOOD, POOR AND EXCELLENT PRACTICE AMONG THE SECOND STUDENTS

MBBS YEAR	EXCELLENT (%)	GOOD (%)	POOR (%)	TOTAL (%)
SECOND	4(2.85)	76(54.28)	60(42.85)	140(34.82)

Males shows Slightly higher representation compared to females. A majority live in hostels, which could influence their dietary and lifestyle choices due to access to shared dining facilities and social environments. The overwhelming majority are vegetarians. This could be due to cultural, religious, or personal preferences. More participants are from urban areas, suggesting better access to diverse food options and facilities. A significant portion comes from rural areas, which might correlate with traditional dietary habits. Almost negligible daily fast-food consumers, indicating low fast-food dependency. A moderate number consume fast food weekly, suggesting occasional indulgence. Most participants fall into this category, indicating fast food is a rare treat for them. A significant number consume fast food very rarely, emphasizing traditional or home-cooked meals as their preference. Table 7 shows distribution and comparison of mean scores for Knowledge, Attitude, and Practice among second-year MBBS students. higher mean knowledge score suggests that second-year MBBS students generally have a moderate to good level of knowledge about the topic being studied. Compared to knowledge, the mean score is slightly lower, but the SD is also slightly less, showing that the scores are similarly distributed but with less variability. The mean practice score is noticeably lower than both knowledge and attitude scores, suggesting that although students have knowledge and a positive attitude, the practical implementation is relatively weaker. The second-year MBBS students have the highest scores in *knowledge*, followed by *attitude*, and the lowest scores in *practice*. According to table 8 the majority of students (38.22%) fall under the "Good" category, 28.12% have inadequate knowledge, highlighting a need for targeted intervention or additional teaching. 33.33% of students excelled, showing that a significant portion has achieved an excellent understanding. These results suggest a mixed level of knowledge, with opportunities to improve the lower-performing group (inadequate knowledge). Table 9 shows a balanced distribution between positive and negative attitudes among second-year MBBS students. With 50.71% showing a positive attitude and 49.28% showing a negative attitude, it suggests that the class is almost evenly split in their outlook. This highlights the need for strategies to improve attitudes, especially among students with a negative perspective. Table 10 shows a significant difference in attitude scores between students with positive and negative attitudes. Students with a positive attitude (19.25) scored significantly higher than those with a negative attitude (14.46), with the difference being statistically significant ($P = 0.000$). This highlights the strong impact of attitude on scoring outcomes. Table 11 highlights a significant difference in practice scores among second-year MBBS students with excellent practice have the highest scores (15.12), followed by those with good practice (12.43), and lastly, those with poor practice (7.42).

Table 12 shows the majority of second-year MBBS students (54.28%**)** demonstrated good practice, while a substantial proportion **(**42.85%**)** exhibited poor practice**.** Only a small fraction (2.85%**)** achieved excellent practice, highlighting the need for targeted efforts to improve the practical application skills of students, especially those in the poor practice category.

SUMMARY AND CONCLUSION

The study highlights a clear hierarchy in KAP scores among second-year MBBS students, with knowledge being the strongest component, followed by attitude, and practice being the weakest.

1. Knowledge: While most students have a good or excellent understanding, a notable proportion (28.12%) require additional teaching or interventions to bridge knowledge gaps.
2. Attitude: Although attitudes are evenly split between positive and negative, strategies should focus on improving the mindset of students with negative attitudes, as it significantly impacts outcomes.
3. Practice: Practical application remains a major area of concern. With 42.85% demonstrating poor practice, efforts must prioritize improving students' ability to translate knowledge and attitude into effective practices.

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