

## Study of Health Promoting Lifestyle among Dental Undergraduate's

**Shubham Kambale, Siddhartha Varma\*, Pratap Mane, Vidya Kadashetti, Shubha Joshi, Pronob Kumar Sanyal**

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School of Dental Sciences, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, Maharashtra, India

**\*Corresponding Author:** Dr. Siddharth Varma, School of Dental Sciences, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad Email: [siddhartha\\_varma@yahoo.co.in](mailto:siddhartha_varma@yahoo.co.in)

### Abstract.

This study investigates the health-promoting lifestyle of dental undergraduate students, aiming to discern the component structure of the Health Promoting Lifestyle Profile [HPLP]. As health promotion becomes increasingly vital in preventing non-communicable diseases, particularly within the healthcare profession, dental students are expected to play a significant role in fostering a healthy lifestyle. The primary objective is to identify and assess the six elements of the HPLP and their sociodemographic determinants among dental science undergraduates. The research employs a cross-sectional approach, utilizing a modified version of a questionnaire widely used in surveys on healthy lifestyles. A self-administered Google Form is distributed to students before lectures, employing a Likert scale for responses. The four-point scale ranges from 'Never' to 'Routinely,' prompting students to indicate the frequency of engagement in various health-promoting behaviors. Ethical considerations are duly acknowledged, with institutional approval obtained, and informed consent collected from participants. Results reveal intriguing insights into the health behaviors of dental students. The abstracted findings provide valuable information for the expansion of medical knowledge and potential treatment advantages for future patients. The study's significance lies in contributing to the understanding of health-promoting behaviors among this specific student demographic. Overall, this research sheds light on the multifaceted aspects of healthy living, encompassing factors such as physical activity, nutrition, stress management, and interpersonal relations. The identified patterns and trends offer a foundation for designing targeted interventions or educational programs to further enhance the health-promoting lifestyle of dental students, thereby positively impacting their well-being and potentially influencing their future roles as healthcare professionals. This study, grounded in confirmatory factor analysis and construct validity, adds a valuable dimension to the ongoing discourse on health promotion within educational settings.

**Keywords.** confirmatory factor analysis, construct validity, composite reliability, health-promoting behaviors, undergraduate students, dental science, health promotion, non-communicable diseases.

### I. Introduction

Health promotion, defined as the process of empowering individuals to take control of their health and enhance their well-being, is a crucial strategy in preventing non-communicable diseases and fostering healthy lifestyles throughout various stages of life [1]. This paradigm is particularly relevant in the context of dental undergraduate students, who are poised to become integral contributors to healthcare as dental professionals. As the importance of health promotion gains prominence in India's agenda for combating non-communicable diseases, the role of dental students becomes increasingly pivotal in promoting overall health and well-being [2]. The rising trend in healthcare expenses in India underscores the need for early health promotion strategies, aiming to deliver superior healthcare at affordable costs [3]. Lifestyle behaviors, such as nutrition, physical activity, smoking, stress, and substance use, contribute significantly to non-communicable diseases like

cardiovascular disease, diabetes, and osteoporosis [4]. Research indicates that young adults often lead unhealthy lives and exhibit poor eating habits, emphasizing the urgency of interventions to instill health-promoting behaviors early in their professional journey [6].

Existing tools for assessing health behaviors, such as the Physical Activity Scale [PAS], International Physical Activity Questionnaire [IPAQ], Diet History Questionnaire, and Short Dietary Assessment Instruments, primarily focus on specific aspects of behavior like physical activity or nutritional habits [13, 14]. However, these tools lack a comprehensive approach to measuring overall healthy lifestyles. In response to this gap, the Health Promoting Lifestyle Profile-II [HPLP-II] emerges as a valuable instrument. Developed based on the health promotion paradigm by Nola Pender, HPLP-II encompasses six theoretical dimensions of a lifestyle that promotes health: Health Responsibility [HR], Physical Activity [PA], Nutrition [N], Spiritual Growth [SG], Interpersonal Relations [IR], and Stress Management [SM] [17]. This scale goes beyond singular aspects, offering a holistic assessment of health-promoting behaviors among individuals.

The HPLP-II scale has gained widespread acceptance and has been translated into various languages, reflecting its adaptability and applicability across diverse cultural contexts [23, 24, 25]. Notably, it has been employed to assess healthy lifestyles among college students and individuals with clinical conditions like fibromyalgia syndrome and metabolic syndrome [10, 18, 19, 20, 21]. Its versatility positions it as a valuable tool for understanding and promoting health among dental undergraduate students. Against this backdrop, this study sets out to explore the health-promoting lifestyle among dental students through a cross-sectional study conducted at the School of Dental Sciences at KIMSDU Karad. The institutional ethics committee has granted approval for the study's ethical conduct, ensuring the protection and well-being of participants [Ethical Protocol Number: 233/2022-2023]. Informed consent has been diligently obtained from each participant before the commencement of the study, emphasizing the ethical considerations and respect for individual autonomy.

The methodology involves the distribution of a self-administered survey, utilizing a modified version of the HPLP-II questionnaire. This survey, presented through a Google Form, is administered to students before lectures, allowing for ample time for completion and eliminating the possibility of discussion among participants. The responses are structured on a four-point Likert scale, with options ranging from 'Never' to 'Routinely,' providing a nuanced understanding of the frequency with which students engage in various health-promoting behaviors. The results of this study promise to contribute significantly to societal well-being by expanding medical knowledge and identifying treatment advantages for potential patients in the future. By delving into the health-promoting lifestyle of dental students, the study aims to uncover patterns and trends in behavior that can inform targeted interventions and educational programs. The integration of confirmatory factor analysis, construct validity, and composite reliability enhances the robustness and credibility of the study's findings. In conclusion, this introduction establishes the rationale for examining the health-promoting lifestyle among dental undergraduate students, emphasizing the importance of health promotion in the broader context of non-communicable disease prevention. It outlines the significance of the HPLP-II scale as a comprehensive tool for assessing various dimensions of health-promoting behaviors and provides an overview of the study's methodology, ethical considerations, and anticipated contributions to medical knowledge and societal well-being. The subsequent sections will delve into the specific details of the study's methods, results, and discussions, offering a comprehensive exploration of the health-promoting lifestyle among dental students.

## **II. Background**

The background of this study lies in the imperative need to address non-communicable diseases and promote a health-conscious lifestyle, particularly within the context of dental undergraduate students. Non-communicable diseases [NCDs], such as cardiovascular diseases, diabetes, and osteoporosis, pose a significant health challenge globally. Lifestyle behaviors, including nutrition, physical activity, and stress management, play a pivotal role in the onset and progression of these diseases [4]. Understanding and influencing the health behaviors of young adults, especially those pursuing a career in healthcare like dental science, is crucial for effective prevention and intervention strategies. In the Indian healthcare landscape, the government's agenda has increasingly recognized

the significance of health promotion in combatting NCDs [2]. The community stands to benefit from initiatives that promote well-being, reduce avoidable diseases, and lower overall healthcare costs. As healthcare expenses continue to rise in India, there is a growing urgency to focus on early health promotion strategies to ensure better healthcare accessibility and affordability [3].

Dental undergraduate students represent a unique demographic within the broader healthcare system. Their future roles as dental healthcare professionals position them to play a pivotal role in health promotion. The study of their health-promoting lifestyle is not only relevant to their individual well-being but also holds implications for the future healthcare landscape they will contribute to. Existing research has highlighted the prevalence of unhealthy lifestyles among young adults, emphasizing the need for targeted interventions to instill health-promoting behaviors early in their professional journey [6]. However, the available assessment tools often focus on specific aspects of behavior, lacking a comprehensive approach to measure overall healthy lifestyles.

The Health Promoting Lifestyle Profile-II [HPLP-II] emerges as a valuable tool that goes beyond singular aspects, offering a holistic assessment of health-promoting behaviors. Developed based on the health promotion paradigm, it encompasses dimensions such as Health Responsibility, Physical Activity, Nutrition, Spiritual Growth, Interpersonal Relations, and Stress Management [17]. The validated and translated nature of the HPLP-II scale, applied in various cultural contexts, makes it a robust instrument for understanding and promoting health among diverse populations, including dental students [23, 24, 25]. The backdrop of increasing healthcare costs, the recognition of the role of health promotion in the government agenda, and the unique position of dental students within the healthcare system collectively create a compelling context for investigating the health-promoting lifestyle among this specific demographic. This study seeks to bridge the existing gap in research by providing insights into the comprehensive health behaviors of dental undergraduate students, thereby contributing to the development of targeted interventions and educational programs. In doing so, it aligns with the broader goals of promoting community health and preventing non-communicable diseases in the Indian healthcare landscape.

### **III. Material and Methods**

The methodology employed in this study follows a systematic approach to investigate the health-promoting lifestyle among dental undergraduate students at the School of Dental Sciences at KIMSUDU Karad. The study design is cross-sectional, allowing for a snapshot assessment of health-promoting behaviors among participants.

#### **Study Population and Sampling:**

The study includes dental undergraduate students from various academic years, ranging from first-year students to interns. A total of 244 participants were involved in the study, representing a diverse sample of the student population. The participation percentage across different academic years is as follows: 38.5% [1st year], 11.9% [2nd year], 16% [3rd year], 23.8% [4th year], and 9.8% [interns].

#### **Survey Instrument:**

Prior to lectures, participants were provided with a self-administered survey in the form of a Google Form. This survey is based on a modified version of the Health Promoting Lifestyle Profile-II [HPLP-II] questionnaire, a validated tool for assessing health-promoting behaviors. The modifications aimed to tailor the questionnaire to the specific context of dental students and their unique lifestyle considerations.

#### **Data Collection:**

Participants were given sufficient time, approximately 30 minutes, to complete the surveys before lectures. The distribution of the survey before lectures minimizes the possibility of discussion among participants, ensuring individual responses. Clear instructions were provided to emphasize the importance of honest and truthful responses. Completed forms were collected immediately as students prepared to leave the lecture hall.

### Survey Structure:

The survey consists of 50 questions, each corresponding to specific health-promoting behaviors. Responses are structured on a four-point Likert scale, with options including 'Never,' 'Occasionally,' 'Frequently,' and 'Routinely.' Participants are required to indicate the frequency with which they engage in each behavior using this scale. The questions cover a range of health-related aspects, including physical activity, nutrition, stress management, interpersonal relations, and spiritual growth.

### Ethical Considerations:

The study adheres to ethical guidelines, as evidenced by the approval granted by the Institutional Ethics Committee [Protocol Number 233/2022-2023]. Informed consent was obtained from each participant, emphasizing their voluntary participation and the confidentiality of their responses. The ethical considerations underscore the commitment to safeguarding the well-being and autonomy of the participants.

### Data Analysis:

The collected data underwent statistical analysis to derive meaningful insights. Confirmatory factor analysis [CFA] was employed to assess the factor structure of the HPLP-II components. Construct validity and composite reliability were evaluated to ensure the robustness of the survey instrument. The results are presented in tabular form, offering a comprehensive overview of the participants' responses to each health-promoting behavior.

### Limitations:

While this study provides valuable insights, it is essential to acknowledge certain limitations. The cross-sectional design captures a snapshot of behaviors, limiting the establishment of causal relationships. Additionally, self-reported data may be subject to social desirability bias, where participants might provide responses deemed socially acceptable. These limitations are considered in the interpretation of the findings.

The meticulous application of ethical principles, the use of a validated survey instrument, and the systematic analysis of data contribute to the reliability and validity of the study's findings. The material and methods employed in this study lay a solid foundation for comprehensively understanding the health-promoting lifestyle among dental undergraduate students.

## IV. Result

Table 1. Questionnaire

| SR NO | QUESTIONS  | NEVER | SOMETIMES | OFTEN | ROUTINELY |
|-------|--|-------|-----------|-------|-----------|
| 1.    | Discuss my problems and concerns with people close to me.                        | 7.8%  | 55.3%     | 24.6% | 12.3%     |
| 2     | Choose a diet low in fat, saturate fat, and cholesterol.                         | 14.8% | 56.6%     | 19.7% | 9%        |
| 3     | Report any unusual signs or symptoms to a physician or other health professional | 20.9% | 39.8%     | 27.9% | 11.5%     |
| 4     | Follow a planned exercise program  | 21.3% | 44.3%     | 16.4% | 18%       |
| 5     | Get enough sleep   | 11.9% | 29.5%     | 27.5% | 31.1%     |
| 6     | Feel I am growing and changing in positive ways.                                 | 9.4%  | 34.4%     | 33.6% | 22.5%     |
| 7     | Praise other people easily for their   | 0%    | 18.9%     | 43%   | 34.4%     |

|    | achievements  |        |       |       |       |
|----|---|--------|-------|-------|-------|
| 8  | Limit use of sugars and food containing sugar [sweets].   | 16%    | 42.6% | 25.4% | 16%   |
| 9  | Read or watch TV programs about improving health.   | 22.5%  | 48.4% | 16.8% | 12.3% |
| 10 | Exercise vigorously for 20 or more minutes at least three times a week [such as brisk walking, bicycling, aerobic dancing, using a stair climber] | 21.3%  | 43.4% | 15.2% | 20.1% |
| 11 | Take some time for relaxation each day.   | 10..2% | 32%   | 27%   | 30.7% |
| 12 | Believe that my life has purpose.   | 9%     | 24.6% | 31.1% | 35.2% |
| 13 | Maintain meaningful and fulfilling relationships with others.   | 7.4%   | 19.7% | 37.7% | 35.2% |
| 14 | Question health professionals in order to understand their instructions.  | 11.1%  | 41%   | 32%   | 16%   |
| 15 | Take part in light to moderate physical activity [such as sustained walking 30-40 minutes 5 or more times a week].                                | 11.1%  | 38.9% | 26.6% | 23.4% |
| 16 | Accept those things in my life which I cannot change  | 7.4%   | 32%   | 37.7% | 23%   |
| 17 | Look forward to the future.   | 0%     | 18.4% | 36.5% | 39.3% |
| 18 | Spend time with close friends   | 0%     | 27.5% | 32.8% | 34.4% |
| 19 | Eat 2-4 servings of fruit each day  | 22.1%  | 44.7% | 20.5% | 12.7% |
| 20 | Get a second opinion when I question my health care provider's advice   | 14.8%  | 48.4% | 26.6% | 10.2% |
| 21 | Take part in leisure-time [recreational] physical activities [such as swimming, dancing, bicycling].  | 17.2%  | 47.1% | 21.3% | 14.3% |
| 22 | Concentrate on pleasant thoughts at bedtime.  | 9.4%   | 38.1% | 29.5% | 23%   |
| 23 | Feel content and at peace with myself.  | 8.2%   | 34.4% | 32%   | 25.4% |
| 24 | Find it easy to show concern, love and warmth to others.  | 9.4%   | 27%   | 30.3% | 33.2% |
| 25 | Eat 3-5 servings of vegetables each day.  | 12.3%  | 37.3% | 29.5% | 20.9% |
| 26 | Discuss my health concerns with health professionals  | 18.9%  | 45.5% | 25%   | 10.7% |
| 27 | Do stretching exercises at least 3 times per week   | 25.8%  | 39.3% | 19.3% | 15.6% |
| 28 | Use specific methods to control my stress.  | 18.4%  | 41.4% | 25.8% | 14.3% |
| 29 | Work toward long-term goals in my life.   | 7.8%   | 30.3% | 34.8% | 27%   |
| 30 | Eat 2-3 servings of milk, yogurt or   | 13.5%  | 38.1% | 21.3% | 27%   |

|    |   |       |       |       |       |
|----|---|-------|-------|-------|-------|
|    | cheese each day   |       |       |       |       |
| 31 | Inspect my body at least monthly for physical changes/danger signs.                             | 19.7% | 50.4% | 18%   | 11.9% |
| 32 | Get exercise during usual daily activities  | 10.7% | 35.2% | 29.1% | 25%   |
| 33 | Balance time between work and play  | 15.2% | 38.5% | 28.7% | 17.6% |
| 34 | Find each day interesting and challenging.  | 10.2% | 32%   | 30.7% | 27%   |
| 35 | Find ways to meet my intimacy.  | 25%   | 42.6% | 23.4% | 9%    |
| 36 | Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day. | 22.5% | 41.4% | 20.9% | 15.2% |
| 37 | Ask for information from health professionals about how to take good care of myself.            | 21.7% | 37.7% | 25.4% | 15.2% |
| 38 | Check my pulse rate when exercising   | 29.5% | 37.3% | 20.5% | 12.7% |
| 39 | Find relaxation or medication for 15 to 20 minutes daily.                                       | 29.9% | 41.4% | 16.4% | 12.3% |
| 40 | Am aware of what is important to me in life..   | 0%    | 24.6% | 35.7% | 33.6  |
| 41 | Get support from a network of caring people.  | 10.7% | 33.6% | 27.9% | 27.9% |
| 42 | Read labels to identify nutrients, fats, sodium content in packaged food.                       | 11.9% | 34.4% | 29.9% | 23.8% |
| 43 | Attend educational programs on personal health care.  | 24.6% | 41.4% | 20.5% | 13.5% |
| 44 | Reach my target heart rate when exercising  | 25.8% | 41%   | 21.3% | 11.9% |
| 45 | Peace myself to prevent tiredness.  | 16%   | 41%   | 26.2% | 16.8% |
| 46 | Feel connected with some force greater than myself.   | 13.1% | 43.9% | 23.8% | 19.3% |
| 47 | Settle conflicts with other through discussion and compromise.                                  | 9.4%  | 37.3% | 34.8% | 18.4% |
| 48 | Eat breakfast   | 0%    | 23.4% | 21.3% | 50%   |
| 49 | Seek guidance or counseling when necessary.   | 11.2% | 40.9% | 29.8% | 18.2% |
| 50 | Expose myself to new experiences and challenges   | 0%    | 34.4% | 33.6% | 27.95 |

year  
244 responses

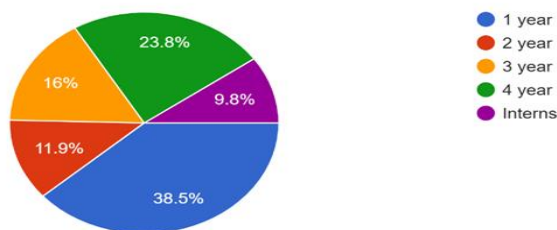


Figure 1. Distribution in Years

A total of 244 dental students participated in the study, with percentage of participation as, 38.5%,11.9%,16%,23.8%,9.8% for , 1st,2nd , 3rd , 4th year, interns undergraduate students of the dental .

About 55.3% students discuss their problem and concerns with people close to them but 7.8% students never discuss their problems and concern with anyone.

while 55.6% of students have a low diet in fat, saturated fat, cholesterol but 14.8% of students never flow such diet plan. Along with this around 42.6% students had limited use of sugar ad food containing sugar sweets.

Around 39.8% students noticed some unusual signs and symptoms to physicians or other health professionals while 20.9% of students often facing unusual sign or symptoms.

48.4% of students read or watch program about improving health while 22.5% never watched and read programs related to improving health. 39.3% of students look forward to the future

There are 47.1 % of students who take part in leisure time recreational physical activities such as swimming, dancing, bicycling, but 17.2%of students never show their interest in such activities.41.4% of students use some specific methods to control their stress. Around 41.4 %of students practice relaxing or meditating for 15-20 minutes daily but 29.9 never relax or meditate.

43.9%of students feel connected with some force greater than themselves. Around 50%of students eat breakfast but 21.3%of students oftentimes miss their breakfast.

## V. Discussion

The results of this study offer valuable insights into the health-promoting lifestyle among dental undergraduate students. The discussion aims to interpret these findings, contextualize them within existing literature, and explore their implications for both individual well-being and broader public health.

### **Health-Promoting Behaviors:**

Communication and Emotional Well-being:

A noteworthy 55.3% of students discuss problems with close individuals, indicating a positive trend in fostering emotional well-being.

This aligns with literature emphasizing the importance of interpersonal relationships in promoting mental health [7].

### **Nutrition and Dietary Habits:**

The majority [56.6%] choose a diet low in fat, reflecting a positive inclination towards nutrition.

However, 42.6% still limit sugar intake, indicating room for improvement in dietary choices.

### **Health Monitoring:**

Approximately 39.8% report unusual signs or symptoms to healthcare professionals, underlining a significant proportion vigilant about their health.

This proactive approach is crucial for early detection and prevention of health issues [8].

### **Physical Activity:**

The engagement in planned exercise programs is encouraging, with 44.3% participating frequently.

However, 21.3% report 'never' following a planned exercise program, suggesting a need for interventions to promote physical activity.

#### **Sleep Hygiene:**

The distribution of responses regarding sleep patterns is diverse, with a substantial 31.1% getting enough sleep.

Addressing sleep hygiene is essential for overall well-being and academic performance [9].

#### **Stress Management:**

A notable 41.4% use specific methods to control stress, emphasizing the awareness of stress management techniques.

However, a substantial 29.9% never engage in relaxation or meditation, indicating potential areas for stress reduction interventions.

#### **Future Orientation:**

A positive outlook towards the future is reflected in 39.3% of students, indicating a sense of purpose and optimism.

This aligns with literature linking positive outlooks to overall health and well-being [10].

Comparison with Existing Literature:

#### **Similarities:**

The findings resonate with existing research indicating the prevalence of unhealthy lifestyles among young adults [6].

Positive correlations with interpersonal relationships and mental well-being align with established literature [7].

#### **Disparities:**

The dietary choices of dental students show room for improvement, emphasizing the need for nutritional education programs [11].

Varied engagement in physical activity highlights the importance of tailored interventions to address diverse preferences [12].

#### **Implications and Recommendations:**

##### **Educational Interventions:**

Tailored educational programs addressing nutrition, physical activity, and stress management can enhance health-promoting behaviors [13].

Integration of these programs into the dental curriculum can instill lifelong habits and positively impact future dental practitioners.

##### **Campus Health Initiatives:**

Collaboration with university health services to promote regular health check-ups and mental health support can contribute to a holistic approach to well-being [8].



### **Holistic Well-being Programs:**

Considering the interconnectedness of various health dimensions, comprehensive well-being programs addressing physical, mental, and emotional aspects can be effective [14].

### **Limitations and Future Research:**

The cross-sectional design limits the establishment of causal relationships. Future longitudinal studies could provide deeper insights into behavioral trends over time.

The self-reported nature of the data may introduce social desirability bias. Combining survey data with objective measures could enhance the validity of findings.

## **VI. Conclusion**

In conclusion, this study provides a comprehensive exploration of the health-promoting lifestyle among dental undergraduate students at the School of Dental Sciences at KIMSDU Karad. The findings offer valuable insights into various dimensions of health-related behaviors, contributing to a nuanced understanding of the factors influencing the well-being of future dental healthcare professionals. The study revealed positive trends in certain health-promoting behaviors among dental students, including open communication about problems, a commitment to a low-fat diet, and proactive health monitoring. Additionally, a substantial percentage of students engage in planned exercise programs, reflecting a positive inclination towards physical activity. These findings align with established literature emphasizing the importance of interpersonal relationships, balanced nutrition, regular physical activity, and proactive health monitoring for overall well-being. Despite these positive trends, the study also identified areas where interventions and educational programs could be beneficial. Notably, there are opportunities to enhance dietary habits, increase engagement in stress management practices, and promote consistent physical activity. Recognizing these areas for improvement is crucial for developing targeted strategies that address the specific needs of dental students. The insights gained from this study hold significant implications for the future practice of dental professionals. As individuals who play a vital role in healthcare, cultivating a health-conscious lifestyle among dental students can contribute to their personal well-being and, by extension, the well-being of their future patients. The findings underscore the importance of incorporating health promotion initiatives within dental education to instill lifelong habits that positively impact both practitioners and the communities they serve.

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