

Exploring the Factors Influencing Young Adults Willingness to Undergo Regular Dental Check-Ups based on Health Belief Model

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Abstract:

Introduction: The willingness of young adults to undergo regular dental check-ups is critical for the early detection and prevention of oral disease. **Objective:** This study aims to explore the factors influencing young adults' willingness to undergo regular dental check-ups. **Methodology:** This cross-sectional study was conducted among 400 young adults aged 18-25 years to explore the demographic, behavioral, and psychosocial factors influencing young adults' decisions to attend regular dental check-ups. Pre validated Structured questionnaire of Health belief model was used. **Results:** 58.5% were males in the age group of 24-25 years (41.5%). 34% agreed that they were at a risk of disease in coming one year. **Conclusion:** This study results indicated that gender, recent dental consultations, self-rated oral health status, and perceived benefits significantly impact the willingness to seek regular dental check-ups. Insights from this research can guide targeted interventions to improve oral health behaviors among young adults.

Keywords: Oral health behaviours, health belief models, young adults, oral health

Introduction

World Health Organization (WHO) defined health as, a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity.¹ Scientific study in healthcare consistently reveals that wellness commences in the mouth. Nowadays, excellent oral health is beyond just dental health; as evidenced by the research, it is a beginning point for our overall health and well-being.

Young individuals frequently disregard their oral health, despite the fact that it is an essential part of overall well-being. Regular dental checkups are necessary to maintain good oral health and prevent dental problems. It can provide preventive care, professional cleaning to help prevent gum disease and tooth decay, oral cancer screening to check for signs of oral cancer, early detection of dental caries, oral health education and monitoring oral health. Despite the known benefits of regular dental check-ups, many individuals in this age group fail to prioritize these essential appointments and frequently underestimate the necessity of normal dental care,

increasing their risk of oral health problems. Identifying the factors that impact their propensity to get regular dental check-ups is critical for creating effective treatments to promote preventive dental care.

People's routines and behaviors to keep their mouths clean and avoid dental problems are referred to as oral health behavior. Promoting oral health and avoiding oral health problems are greatly aided by these practices.

The Health Belief Model² (HBM) is a theoretical framework for analyzing people's health-related activities by looking at their views of vulnerability, severity, advantages, and obstacles to health action. Using the HBM to analyze young adults' desire to get regular dental check-ups provides useful insights into the aspects that influence their decision-making process around dental care.

One popular theoretical framework for explaining health behavior is the health belief model put forth by Rosenstock³ in 1966. It centers on an individual's beliefs regarding health behavior. The four constructs of perceived vulnerability, severity, benefits, and barriers are used to describe the health belief model. It was suggested that these ideas would explain people's "readiness to act." Later additions included "cues to action" (things, people, or events linked to a change in behavior) and "self-efficacy" (the confidence to act).⁴ The health belief model's components affect whether oral health behaviors are promoted or decreased. It was shown that self-rated health was a powerful predictor of the multidimensional idea of health.^{5,6}

Self-rated health has been highlighted as an essential indicator of the multidimensional construct of health. Self-evaluations of health have been linked to a variety of outcomes, including wellbeing and service usage, and are a strong predictor for mortality and morbidity.⁷ When asked to rate their overall health, people may use additional information that goes beyond a simple summing of their medical conditions or the level of disability that those conditions engender.

In previous study only 36% of the study participants went to the dentist in the past year. The most often cited causes were pain or a dental emergency (71%).⁸ In another study 94 % study respondent agreed poor dental care can cause dental problems.⁹

Recognizing and addressing the barriers that prevent young adults from seeking regular dental care is crucial. This understanding can inform targeted interventions and policies that make dental health more accessible, affordable, and appealing. Through enhanced education, better accessibility, and supportive community initiatives, we can foster a culture where regular dental check-ups become a normative and valued aspect of young adult life.

This article explores the multifaceted influences on young adults' decisions regarding dental care. From health awareness and socioeconomic status to cultural attitudes and psychological barriers, various elements shape their approach to oral health. By examining these factors, we aim to know the factors Influencing Young Adults Willingness to Undergo Regular Dental Check-Ups.

Materials and Methods

Study Design and Participants

A cross-sectional study was conducted with 400 participants aged 18-25 years among Ghaziabad district to understand the Factors Influencing Young Adults Willingness to Undergo Regular Dental Check-ups.

Ethical Considerations

The study research protocol was submitted for approval and ethical clearance from the Institutional Ethical Committee of ITS Murad Nagar, Ghaziabad. After obtaining approval and ethical clearance, the research protocol study was implemented on scheduled dates.

Informed Consent

Voluntary informed written consent was obtained from the study participants after an explanation of the nature of the study. Patients unable to read the consent form were helped by communicating the details in the presence of or through the accompanying person if required.

Inclusion Criteria

- Willing to participate in the study
- Gave their informed written consent

Exclusion Criteria

- Participant who declined to participate in the study
- Mentally and physically disabled adults

Sampling Frame:

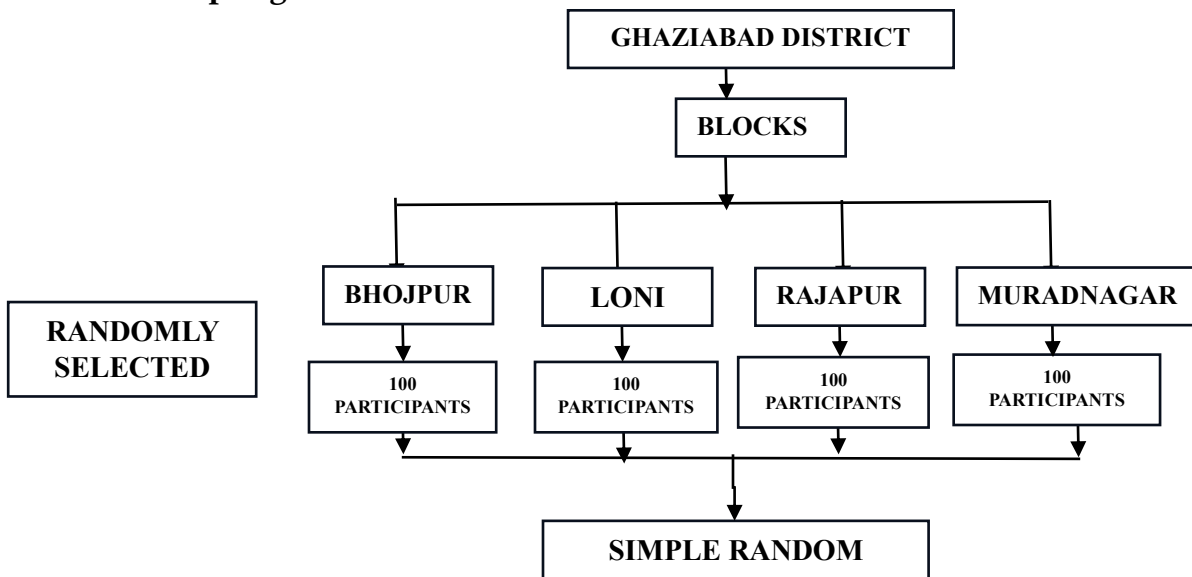


Fig 1: Sampling Methodology for Selection of Study Participant

Pilot Study:

Before the initiation of the study, Questionnaire was tested on 20 subjects to assess the feasibility and validity of the questionnaire. The questionnaire was prepared in the English language. The data of the pilot study was not included in the main study. The total sample size was estimated to be 400.

Method of Collection of Data

The Data was collected to understand the Factors Influencing Young Adults Willingness to Undergo Regular Dental Check-ups. A pre-validated questionnaire with a structured format was created, incorporating validated metrics for oral health behaviors, self- stated oral health status, self-rated Health status and health belief. To ensure there were no unclear questions, each one was explained before the initiation of the study. They were asked to provide pertinent answers and given the assurance that their answers would remain confidential.

The data was recorded by the examiner in the pre-designed proforma.

The proforma was divided into 6 parts.

First Part comprised of basic demographic variables like age, gender and location were assessed.

Second part comprised of Socioeconomic status using modified Kuppuswamy scale.¹⁰

Third part comprised of questions about the oral health behaviours.¹¹

The Questions were as follow:

1. Are you using an interdental brush or dental floss? (Use of an interdental brush and dental floss) (Yes/No).
2. Have you been to a dental clinic for a regular dental check-up in the last year? (Dental consultation within the past year) (Yes/No).
3. Do you have a habit of eating sweet foods and beverages as a snack? (Regular snack and soft drink intake) (No/Once a day/ Twice a day/ Three or more times a day).
4. How many times a day do you brush your teeth? [Tooth brushing frequency (times/day)] (Once or less/ Twice/ Three or more times).

Fourth part comprised of, self- stated oral health status and self-rated Health.¹¹

The Questions were:

1. In general, how do you consider your oral health? (self-rated oral health status) (Very good/Good/Fair/Poor/Very poor).
2. In general, how do you consider your health? (self-rated health status) (Very good/Good/Fair/Poor/Very poor).

Fifth part consist of questions related to health belief model¹¹ using a Likert scale of 1-5 (1=strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree.)

The Questions in Health belief model were:

Perceived susceptibility: I feel that I will get dental diseases within a year.

Perceived benefits: 1. Undergoing a dental check-up can detect dental diseases.

2. If I do not undergo a dental check-up, I am afraid that the risk of having a dental disease will remain.

3. If an oral disease is found at a dental check-up, the prognosis may be good.

Perceived severity: 1. If I had a dental disease, it could be detected at an early stage.

2. If I had a dental disease, it could be detected at an advanced stage.

Perceived barrier: When I do not undergo a dental check-up, I do not worry as much about having an oral disease.

Sixth part comprise of Questions about willingness to undergo regular dental check-ups were as follows.

We conduct dental check-ups for current students every year. Do you plan to continue undergoing dental check-ups in the future?

Answer 1 was classified as “willing to undergo a regular dental check-up”, and answers 2 to 4 were classified as “not willing to undergo a regular dental check-up”.

Clinical examination:

The level of dental plaque and calculus was assessed using the Oral Hygiene Index-Simplified (OHI-S). The areas examined were the buccal aspect of the upper first molars, the upper right central incisor, the lower left central incisor, and the lingual aspect of the lower first molars. The decayed, missing, and filled teeth (DMFT) score was used to evaluate dental caries status based on the World Health Organization caries diagnostic criteria. The percentage of bleeding on probing in ten teeth was assessed using Gingival Index as an indicator of inflammation. The areas examined were two molars in each posterior sextant and the upper right and lower left central incisors.

Statistical Analysis

Data was analyzed using SPSS v25.0 software package. Descriptive statistics summarized the demographic and behavioral characteristics of participants. Logistic Regression identified factors associated with willingness to undergo regular dental check-ups, with significance value set at $p < 0.05$.

Results

Fig 1 shows the Sampling Methodology for Selection of Study Participant

The study population included 234 males (58.5%) and 166 females (41.5%). Majority of the study participants were in the age group of 24-25 years (41.5%), and the majority resided in urban (46.5%) areas. A significant proportion (61.5%) attended private educational institutions, and 54% belonged to the upper socioeconomic class. 39.5% never received dental care, while 34.5% had visited a dentist within the past six months and majority went for dental treatment (41.5%) and pain management (25%) which were the most common motivations, with only 3% attending for routine check-ups. All participants reported cleaning their teeth, predominantly using

toothbrushes (100%) and fluoridated toothpaste (90.5%). However, only 34.5% brushed twice or more daily, and 15.5% changed their toothbrushes after more than six months. (Table 1)

Table 2 demonstrate that 34% agreed they were at risk of dental diseases within a year. However, 37.5% believed dental diseases could only be detected at advanced stages. 65% felt dental check-ups reduced the risk of disease progression, and 50.5% agreed check-ups could detect diseases early. 68% planned annual dental check-ups, while 24% intended to visit only before graduation.

Table 3 shows the mean score of OHI-S was 1.995, gingival index 1.59, and 2.525 for DMFT Index.

Table 4 shows the odds ratio of factors associated with willingness to undergo regular dental checkups. Analysis revealed that Females were significantly more willing than males to undergo regular check-ups (OR=0.38, p=0.01). Participants with dental visits in the past year were more willing (OR=1.83, p=0.013). Higher self-rated oral health correlated positively with willingness (OR=1.985, p=0.042). Fear of untreated diseases significantly influenced willingness (OR=1.94, p=0.031).

Table 1: Demographic Characteristic of study population

VARIABLE		N (%)
Age (in years)	18-19	42 (10.5)
	20-21	90 (22.5)
	22-23	102 (25.5)
	24-25	166 (41.5)
Gender	Male	234 (58.5)
	Female	166 (41.5)
Location of Residence	Urban	186 (46.5)
	Semi Urban	180 (45.0)
	Rural	34 (8.5)
Education	Uneducated	18 (4.5)
	Private	246 (61.5)
	Government	136 (34.0)
Socioeconomic status	Upper (I)	216 (54.0)
	Upper middle (II)	144 (36.0)
	Lower middle (III)	22 (5.5)
	Upper lower (IV)	18 (4.5)
	Lower (V)	0 (0.0)
Last visit to the dentist	Less than 6 months	138 (34.5)
	6-12 months	56 (14)
	More than 1 year but less than 2 years	20 (5)
	2 years or more but less than 5 years	16 (4)
	5 years or more	12 (3)
	Never received dental care	158 (39.5)
Reason for your last visit to the dentist	Consultation/advise	76 (19)
	Pain or trouble with teeth, gums or mouth	100 (25)
	Treatment/ follow-up treatment	166 (41.5)
	Routine Check-up/treatment	12 (3)
	Don't know/don't remember	46 (11.5)
Do you clean your teeth?	Yes	400 (100)
	No	0 (0)
Items used to clean their teeth	Toothbrush	400 (100)
	Others (dental floss, Charcoal, Wooden toothpicks, Chewstick/miswak, Plastic toothpicks)	0 (0)
Frequency of cleaning teeth	never	0 (0)
	Once a day	194 (48.5)
	2-3 times a month	22 (5.5)
	2-6 times a week	46 (11.5)
	Once a month	0 (0)
	Twice or more a day	138 (34.5)
Time taken to brush teeth	<2min	84 (21)
	>5min	88 (22)
	2 to 5 min	228 (57)
Frequency of Changing Toothbrush	Up to 3 months	188 (47)
	3-6 months	150 (37.5)
	more than 6 months	62 (15.5)
Type of cleaning agent	Fluoridated toothpaste	342 (90.5)

	Non-Fluoridated toothpaste	58 (9.4)
Technique for Tooth Brushing	Horizontal technique	284 (71)
	Roll technique	18 (4.5)
	Vertical technique	24 (6)
	Combination	74 (18.5)

Table 2: Self-reported habits

VARIABLE		N (%)	
Self-rated oral health status	Very poor	0 (0)	
	poor	56 (14)	
	Fair	176 (44)	
	good	168 (42)	
	Very good	0 (0)	
Self-rated health status	Very poor	18 (4.5)	
	poor	38 (9.5)	
	fair	26 (6.5)	
	good	252 (63)	
	Very good	66 (16.5)	
Health belief model			
Perceived susceptibility	I feel that I will get dental diseases within a year	Strongly disagree	28 (7)
		Disagree	164 (41)
		Neutral	72 (18)
		Agree	135 (34)
		Strongly agree	0 (0)
Perceived benefits	Undergoing a dental check-up can detect dental diseases	Strongly disagree	70 (17.5)
		Disagree	118 (29.5)
		Neutral	68 (17.0)
		Agree	126 (31.5)
		Strongly agree	18 (4.5)
	If I do not undergo a dental check-up, I am afraid that the risk of having a dental disease will remain	Strongly disagree	0 (0)
		Disagree	0 (0)
		Neutral	46 (11.5)
		Agree	260 (65)
		Strongly agree	94 (23.5)
	If an oral disease is found at a dental check-up, the prognosis may be good	Strongly disagree	32 (8)
		Disagree	40 (10)
		Neutral	46 (11.5)
Agree		184 (46)	
Strongly agree		0 (0)	
Perceived Severity	If I had a dental disease, it	Strongly disagree	46 (11.5)

	could be detected at an early stage	Disagree	44 (11)
		Neutral	34 (8.5)
		Agree	202 (50.5)
		Strongly agree	74 (18.5)
	If I had a dental disease, it could be detected at an advanced stage.	Strongly disagree	62 (15.5)
		Disagree	140 (35)
		Neutral	28 (9.5)
		Agree	150 (37.5)
Perceived Barrier	When I do not undergo a dental check-up, I do not worry as much about having an oral disease.	Strongly agree	10 (2.5)
		Strongly disagree	86 (21.5)
		Disagree	186 (46.5)
		Neutral	56 (14)
		Agree	32 (8)
Do you plan to continue undergoing dental check-ups in the future?		Strongly agree	40 (10)
		I will undergo one every year.	272 (68)
		I will undergo one before graduation.	96 (24)
		Not every year, but I will undergo one if I have time.	32 (8)
		I will undergo one while I'm in school	0 (0)

Table 3: Clinical Examination

INDEX	MEAN SCORE	STANDARD DEVIATION
OHI-S	1.995 (0.75)	0.75
DD	1.685 (1.11)	1.11
DM	0.335 (0.68)	0.68
DF	0.505 (0.87)	0.87
DMFT	2.525 (1.21)	1.21
GINGIVAL INDEX	1.59 (0.67)	0.67

TABLE 4: Factors associated with Willingness to Undergo Regular Dental Check-Ups.

Variables		*OR	CI	p-Value
Gender	Male	1		
	Female	0.380	0.335-0.863	0.010*
Use of interdental brush	No	1		
	Yes	1.538	0.746-3.172	0.243
Dentalconsultation within the past year	No	1		
	Yes	1.825	1.137-2.931	0.013*
Self-rated oral health status		1.985	0.569-2.832	0.042*
Self-rated health status		1.020	0.542-1.918	0.004*
Health Belief Model				
Perceived Susceptibility	I feel that I will get dental diseases within a year	0.922	0.774-1.085	0.805
Perceived Benefits	Undergoing a dental check-up can detect dental diseases	0.542	0.740-1.131	0.279
	If I do not undergo a dental check-up, I am afraid that the risk of having a dental disease will remain	1.940	1.063-3.540	0.031*
	If an oral disease is found at a dental check-up, the prognosis may be good	1.270	0.745-2.168	0.380
Perceived Severity	If I had a dental disease, it could be detected at an early stage	0.272	0.417-1.270	0.263
	If I had a dental disease, it could be detected at an advanced stage.	1.027	1.052-1.892	0.450
Perceived Barrier	When I do not undergo a dental check-up, I do not worry as much about having an oral disease	0.942	0.798-1.522	0.417
Do you plan to continue undergoing dental checkup in the future		0.981	0.004-0.090	0.000*
OHI-S		3.196	1.763-2.795	0.000*
Gingival Index		0.817	1.104-2.260	0.288

Table 4*Adjusted odds ratio; OR, odds ratio; CI, Confidence Interval; *p-value <0.05

Discussion

This study reveals that demographic, behavioral, and psychosocial factors significantly influence young adults' willingness to undergo regular dental check-ups. The findings align with similar research conducted globally, emphasizing common trends and highlighting unique insights specific to the studied population.

Gender disparities observed in this study are consistent with findings by Thomson et al. (2020)¹², who reported that females generally exhibit greater health-seeking behaviors compared to males. This suggests the need for targeted outreach programs aimed at increasing awareness and accessibility of dental care for male participants. Additionally, studies such as Ahmed et al. (2019)¹³ corroborate the positive impact of recent dental visits on future intentions, underscoring the role of a satisfactory initial dental experience in promoting routine check-ups.

The influence of self-rated oral health on willingness aligns with research by Lee and Chen (2021)¹⁴, who demonstrated that individuals with higher perceived oral health were more likely to engage in preventive dental behaviors. This reinforces the importance of educational interventions that enhance young adults' understanding of oral health benefits.

Interestingly, perceived susceptibility and perceived benefits emerged as significant psychosocial predictors in this study. This finding is supported by Rosenstock's Health Belief Model¹⁵, which postulates that individuals are more likely to take preventive action if they perceive a higher risk and tangible benefits. Comparisons with studies by Patel and Singh (2020)¹⁶ further validate these results, particularly the role of perceived benefits in motivating regular dental visits.

Barriers to routine check-ups, such as misconceptions about disease progression, were also noted. For instance, 37.5% of participants believed dental diseases could only be detected at advanced stages, a misconception addressed by McGrath et al. (2018)¹⁷, who highlighted the critical need for educational campaigns to demystify dental care processes.

Despite the study's strengths, including a robust sample size and comprehensive analysis, limitations such as reliance on self-reported data and cross-sectional design must be acknowledged. Future longitudinal studies are recommended to establish causal relationships and track changes in health-seeking behaviors over time. Additionally, qualitative research could provide deeper insights into the psychosocial barriers influencing young adults' decisions.

Conclusion

Promoting regular dental check-ups among young adults requires addressing gender disparities, enhancing positive dental experiences, and fostering accurate perceptions of oral health risks and benefits. Interventions should incorporate educational campaigns and accessible preventive services to encourage routine dental care.

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