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Career Readiness and Decision Confidence Among Senior Dental Students in Dental Colleges of Maharashtra: A Cross-Sectional Survey

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Abstract

Introduction: The rapid expansion of dental education in India has intensified competition in the dental job market, making the transition from undergraduate training to professional practice increasingly uncertain. This study assessed career readiness and decision confidence among senior dental students in Maharashtra and examined the association between formal career guidance and these outcomes.

Methods: A cross-sectional, questionnaire-based survey was conducted among final-year Bachelor of Dental Surgery (BDS) students and compulsory rotatory interns using a structured, self-administered 10-item Google Forms questionnaire (Google, Mountain View, CA) and convenience sampling. The minimum required sample size was 202 (95% confidence level, 6.9% precision), and 208 responses were analysed. Career readiness was calculated as the mean of three five-point Likert items (career-path confidence, preparedness for the job market, and clarity of career plan); the career-path confidence item served as a single-item proxy for decision confidence. Responses were summarised descriptively. Participants with and without formal career guidance were compared using the Mann-Whitney U test (primary) and Welch's t-test (supplementary), with $p < 0.05$ considered significant.

Results: Among the 208 participants, 102 (49.0%) were final-year students and 106 (51.0%) were interns; 202 (97.1%) studied in private colleges, and 145 (69.7%) reported receiving formal career guidance. The mean career readiness score was 3.83 ± 0.79 (median = 4.00), and the mean career-path confidence score was 3.86 ± 0.88. Overall, 153 (73.6%) felt confident about their career path, 143 (68.8%) felt prepared for the job market, and 149 (71.6%) had a clear career plan. Postgraduate (Master of Dental Surgery) study was the preferred immediate plan for 107 (51.4%) participants, while high competition (n = 67, 32.2%) and lack of job opportunities (n = 48, 23.1%) were the biggest concerns. The mean overall readiness rating was 7.26 ± 3.28 out of 10. Participants who received guidance had significantly higher career readiness (4.02 ± 0.69 vs. 3.39 ± 0.84; $U = 6816$, $p < 0.001$) and confidence scores (4.06 ± 0.80 vs. 3.40 ± 0.89; $U = 6532$, $p < 0.001$) than those who did not.

Conclusions: In this convenience sample of senior dental students in Maharashtra, self-reported career readiness and career-path confidence were generally favourable, although a substantial minority reported receiving no formal career guidance. Participants who reported guidance had higher readiness and career-path confidence scores in unadjusted comparisons. These cross-sectional findings do not establish causality and may be influenced by differences in academic level, institutional characteristics, and other unmeasured factors. Multicentre longitudinal studies using validated measures and appropriate adjusted analyses are needed to determine whether structured career guidance improves career preparedness and subsequent professional outcomes.

Categories: Medical Education, Public Health, Dentistry
Keywords: career guidance, career planning, career readiness, decision confidence, dental students

Introduction

Dental education in India has expanded markedly over the past several decades, with a steep rise in the number of dental colleges and a corresponding increase in the number of graduating dentists [1,2]. Projections of dental manpower have repeatedly warned of an oversupply of dentists [3], and the resulting competition has been linked to rising unemployment and dissatisfaction among newly qualified graduates [1,4]. Limited government vacancies, a shortage of postgraduate seats relative to the number of graduates, and an uneven urban-rural distribution of dentists have been described as additional structural problems [4-6]. Maharashtra is one of the leading states in dental education and contributes a substantial share of the country's undergraduate dental graduates through its government and private institutions. For students in such a setting, the move from supervised training to independent professional life has become complex, and preparedness for this transition has become an important educational concern.

Career readiness can be understood as a person's perceived preparedness to move from training into professional work, encompassing confidence in one's abilities, clarity of goals, and awareness of available pathways. Decision confidence is closely related to the construct of career decision-making self-efficacy, which was introduced to explain career indecision [7] and later operationalised in validated scales [8]. Within social cognitive career theory, self-efficacy beliefs, outcome expectations, and contextual supports jointly shape career choices and goals [9], and recent multinational data from dental students suggest that career-planning training influences career aspirations through self-efficacy and expectations [10].

Most dental research on careers has examined motivations, satisfaction, and speciality preferences. Career plans and postgraduate aspirations have been studied among senior students in Saudi Arabia [11,12] and the United Arab Emirates [13], while career satisfaction and reasons for choosing dentistry have been explored in Saudi students [14,15] and motivations and future plans in Chinese and American final-year students [16,17]. A Saudi study further reported that senior students were more likely than junior students to perceive obtaining a government job, securing a speciality place, and establishing a private clinic as future career challenges [18].

Indian studies among interns and students have described apprehension about job uncertainty and a perceived lack of effective career guidance in Kerala [19], the influence of income and working hours on the choice of dentistry among first-year students in Odisha [20], and the role of family advice and social status among interns [21]. However, studies that quantify perceived career readiness and decision confidence in relation to formal career guidance among senior dental students in Maharashtra remain scarce.

This study aimed to assess perceived career readiness and career-path confidence among a convenience sample of final-year BDS students and compulsory rotatory interns in Maharashtra, India. The specific objectives were to describe these self-reported outcomes, examine their unadjusted association with receipt of formal career guidance, and identify preferred immediate career pathways and major career-related concerns.

Materials And Methods

Study design and setting

This cross-sectional, questionnaire-based survey was conducted among senior dental students enrolled in dental colleges of Maharashtra, India, over a three-month period (June 2026 to August 2026). The study is reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines [22].

Participants

Final-year Bachelor of Dental Surgery (BDS) students and compulsory rotatory interns of government and private dental colleges in Maharashtra were eligible if they were willing to participate, provided electronic informed consent, and were able to complete the online questionnaire during the study period. Only complete and valid responses were included in the analysis.

Sampling and sample size

A non-probability convenience sampling technique was used because of the feasibility of online data collection and the absence of a complete sampling frame of eligible students. The sample size for estimating a single population proportion was calculated as $n = Z^2pq/d^2$, where Z = 1.96 (95% confidence level), p = 0.5 (anticipated proportion, giving the maximum sample size), q = 1 − p = 0.5, and d = 0.069 (absolute precision). This gave n = 0.9604/0.004761 ≈ 201.7, rounded to a minimum of 202 participants. The final analysed sample comprised 208 participants, which exceeded the minimum requirement and corresponds to an approximate precision of ±6.8 percentage points at the 95% confidence level, assuming simple random sampling and a proportion of 50%.

Study instrument

A structured, self-administered, closed-ended questionnaire was developed in Google Forms (Google, Mountain View, CA) on the basis of a review of relevant literature [11,13,19] and the study objectives. The questionnaire consisted of four sections: participant demographics and academic background; career readiness and decision confidence; career guidance and influencing factors; and career plans and perceptions. The complete questionnaire is provided in the Appendices.

Data collection

The Google Forms link was circulated to eligible students through institutional email groups, WhatsApp student groups, and student networks after obtaining permission from college authorities. An introductory section explained the purpose of the study and assured confidentiality, and an electronic informed consent statement had to be accepted before the questionnaire could be accessed. The form was configured to permit one submission per participant, no personally identifiable information was requested for analysis, and

periodic reminders were sent during the data-collection period. Responses were exported to a spreadsheet for cleaning and analysis.

Outcome variables

Likert responses were coded from 1 to 5. The career readiness score was calculated for each participant as the mean of Q3, Q4, and Q5 (range = 1-5; higher scores indicate greater readiness). Because the dataset did not contain a validated multi-item decision confidence scale, the single item Q3 (confidence about career path) was used as a proxy for career decision confidence. The overall readiness rating (Q10) was extracted as a number from 1 to 10 from the response text. Receipt of formal career guidance (Q6) was the grouping variable. All 208 participants provided a rating for Q7. One response to Q9 recorded as 'Option 6' (three participants) could not be matched to a labelled category and is reported as 'Other (unspecified)', and one participant selected 'All of the above'.

Ethical considerations

The study protocol was approved by the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth, Karad, Maharashtra (Protocol No.: 693/2025-2026; dated: 15th May, 2026). Participation was voluntary, electronic informed consent was obtained from all participants, participants could withdraw at any stage, and data were stored securely and used for academic purposes only.

Statistical analysis

Data were analysed using IBM SPSS Statistics for Windows, version 27.0 (IBM Corp., Armonk, NY). Categorical variables are presented as frequencies and percentages. Likert items and derived scores are presented as mean ± standard deviation (SD), median, and interquartile range (IQR, Q3 − Q1). Participants who reported receiving formal career guidance were compared with those who did not for the career readiness score and for the career-path confidence item. The Mann-Whitney U test was selected as the primary test because the outcomes were derived from ordinal Likert items and distributional assumptions may not hold; Welch's independent-samples t-test was reported as a supplementary comparison. Tests were two-sided, and $p < 0.05$ was considered statistically significant. The mean difference with its 95% confidence interval (CI), the rank-biserial correlation ($r = 2U/[n_1 n_2] - 1$), and Cohen's d (pooled SD) were calculated as measures of effect size. Available data were used for each outcome, and no values were imputed. P-values were not adjusted for multiple testing.

Results

A total of 208 valid responses were analysed (the questionnaire is provided in the Appendices).

Participant characteristics and career guidance

The sample was almost evenly divided between final-year BDS students (n = 102, 49.0%) and compulsory rotatory interns (n = 106, 51.0%) (Table *1*). Most participants (n = 202, 97.1%) studied in private dental colleges and only six (2.9%) studied in government colleges, so no meaningful government-private comparison was possible. Overall, 145 participants (69.7%) reported receiving formal career guidance from their dental college, and 63 (30.3%) did not. All six government-college respondents reported guidance, so all 63 participants without guidance came from private colleges. Guidance was reported by 65 of 102 final-year students (63.7%) and 80 of 106 interns (75.5%) (descriptive cross-tabulation; not tested).

Characteristic	Category	n	%
Academic year	Final-year BDS student	102	49.0
	Compulsory rotatory intern	106	51.0
Type of dental college	Private	202	97.1
	Government	6	2.9
Formal career guidance received (Q6)	Yes	145	69.7
	No	63	30.3

TABLE 1: Participant characteristics and receipt of formal career guidance.

Descriptive statistics only (frequency and percentage); no inferential tests were applied.

N: total number of participants; n: frequency; %: percentage of the total sample; BDS: Bachelor of Dental Surgery.

Confidence, preparedness, and perceived usefulness of guidance

Most participants were confident about their career path (Q3: 153, 73.6%, agreed or strongly agreed; mean = 3.86 ± 0.88), felt adequately prepared to enter the job market (Q4: 143, 68.8%; mean = 3.77 ± 0.90), and had a clear plan for their future career (Q5: 149, 71.6%; mean = 3.86 ± 0.85) (Table *2*). Perceived job-market preparedness had the lowest mean of the three readiness items and the largest neutral proportion (24.0%). The career readiness composite (mean of Q3-Q5) was 3.83 ± 0.79, and 127 participants (61.1%) scored 4 or higher.

Panel A. Likert-scale items (1 = strongly disagree to 5 = strongly agree)								
Item	Strongly disagree, n (%)	Disagree, n (%)	Neutral, n (%)	Agree, n (%)	Strongly agree, n (%)	Agree + strongly agree, n (%)	Mean ± SD	Median (IQR)
Q3. Confident about career path after BDS	4 (1.9)	11 (5.3)	40 (19.2)	109 (52.4)	44 (21.2)	153 (73.6)	3.86 ± 0.88	4 (1)
Q4. Adequately prepared to enter the dental job market	6 (2.9)	9 (4.3)	50 (24.0)	105 (50.5)	38 (18.3)	143 (68.8)	3.77 ± 0.90	4 (1)
Q5. Clear plan regarding future career	3 (1.4)	9 (4.3)	47 (22.6)	105 (50.5)	44 (21.2)	149 (71.6)	3.86 ± 0.85	4 (1)
Q7. Career guidance helped in making career decisions	6 (2.9)	18 (8.7)	57 (27.4)	98 (47.1)	29 (13.9)	127 (61.1)	3.61 ± 0.93	4 (1)
Career readiness composite (mean of Q3-Q5)	–	–	–	–	–	127 (61.1)	3.83 ± 0.79	4.00 (0.67)

Panel B. Preferred immediate career plan after BDS (Q8) and biggest concern (Q9)			
Item	Response	n	%
Q8. Preferred immediate career plan	Postgraduate studies (MDS)	107	51.4
	General dental practice	36	17.3
	Private clinic (associate/ownership)	24	11.5
	Undecided	22	10.6
	Government job	19	9.1
	High competition	67	32.2
	Lack of job opportunities	48	23.1

	Financial instability	37	17.8
Q9. Biggest concern	Work-life balance	32	15.4
	Lack of guidance	20	9.6
	Other (unspecified; recorded as "Option 6")	3	1.4
	All of the above	1	0.5
Panel C. Overall readiness to start a professional dental career (Q10; 1 = not ready at all to 10 = completely ready)			
Rating	n	%	
1	30	14.4	
2-3	7	3.4	
4-6	34	16.3	
7-9	42	20.2	
10	95	45.7	
Mean ± SD	7.26 ± 3.28		
Median (IQR)	9 (5)		

TABLE 2: Item-level responses and summary scores.

Descriptive statistics only (frequency, percentage, mean ± SD, median, IQR); no inferential tests were applied.

Participants with a composite score of 4 or higher. Percentages may not total exactly 100 because of rounding. Q10 ratings are grouped for presentation; the mean, SD, median, and IQR were calculated from the ungrouped ratings.

N: total number of participants; n: frequency; %: percentage of the total sample; SD: standard deviation; IQR: interquartile range (75th percentile minus 25th percentile); MDS: Master of Dental Surgery.

Perceived helpfulness of guidance (Q7) had the lowest mean of the four Likert items (3.61 ± 0.93), with 127 participants (61.1%) agreeing or strongly agreeing. All 208 participants rated this item, including the 63 who reported no formal guidance. Among those with formal guidance, 114 of 145 (78.6%) agreed or strongly agreed that guidance had helped, compared with 13 of 63 (20.6%) of those without (descriptive cross-tabulation; not tested). The ratings of the latter group may reflect informal sources of guidance or a different interpretation of the item.

Career plans and concerns

Postgraduate study (Master of Dental Surgery, MDS) was the most preferred immediate plan (n = 107, 51.4%). Sixty participants (28.8%) planned to enter practice directly (general practice or private clinic), 22 (10.6%) were undecided, and 19 (9.1%) were targeting government jobs (Table *2*). High competition (n = 67, 32.2%) and lack of job opportunities (n = 48, 23.1%) were the most frequently selected concerns, together accounting for 115 responses (55.3%). Lack of guidance was selected by 20 participants (9.6%).

Overall readiness

Overall readiness (Q10, scale 1-10) was polarised: 95 participants (45.7%) gave the maximum rating of 10, whereas 30 (14.4%) gave the minimum rating of 1 (mean = 7.26 ± 3.28; median = 9, IQR = 5). The median lies well above the mean because of the long tail of low ratings.

Outcomes by receipt of formal career guidance

Participants who had received formal career guidance (n = 145) scored higher than those who had not (n = 63) on both outcomes (Table *3*). The career readiness composite had a mean of 4.02 ± 0.69 in the guidance group and 3.39 ± 0.84 in the no-guidance group. The career-path confidence score (Q3) had a mean of 4.06 ± 0.80 versus 3.40 ± 0.89. The no-guidance group also showed a wider spread of scores. Supplementary descriptive data show the same direction for perceived helpfulness of guidance (Q7) and overall readiness (Q10).

Outcome	Guidance (n = 145), Mean ± SD; median (IQR)	No guidance (n = 63), Mean ± SD; median (IQR)	Mean difference (95% CI)	Mann-Whitney U (primary)	Welch's t-test (supplementary)	Effect size
Career readiness composite (scale 1-5)	4.02 ± 0.69; 4.00 (0.33)	3.39 ± 0.84; 3.33 (0.83)	0.62 (0.39-0.86)	U = 6816; p < 0.001 (5.87 × 10^{-9})	t = 5.22 (df ≈ 100); p < 0.001 (9.81 × 10^{-7})	r = 0.49; d = 0.85
Career-path confidence, Q3 (scale 1-5)	4.06 ± 0.80; 4 (1)	3.40 ± 0.89; 3 (1)	0.66 (0.40-0.91)	U = 6532; p < 0.001 (7.69 × 10^{-8})	t = 5.06 (df ≈ 107); p < 0.001 (1.77 × 10^{-6})	r = 0.43; d = 0.80
Helpfulness of guidance, Q7 (scale 1-5)†	3.92 ± 0.71; 4 (0)	2.89 ± 0.99; 3 (1)	Not applicable	Not applicable	Not applicable	Not applicable
Overall readiness, Q10 (scale 1-10)†	8.34 ± 2.51; 10 (3)	4.79 ± 3.51; 5 (6.5)	Not applicable	Not applicable	Not applicable	Not applicable

TABLE 3: Career readiness and decision confidence by receipt of formal career guidance.

Mann-Whitney U test (two-sided; primary test for ordinal Likert-derived scores) and Welch's independent-samples t-test (two-sided; supplementary, not assuming equal variances).

Mean differences (guidance minus no guidance) are given with the Welch 95% CI. Statistical significance was set at $p < 0.05$; p-values are unadjusted for multiple testing. † Calculated for description only; no inferential test was applied.

SD: standard deviation; IQR: interquartile range; CI: confidence interval; U: Mann-Whitney U statistic; t: Welch's t statistic; df: degrees of freedom; r: rank-biserial correlation ($2U/[n_1n_2] - 1$); d: Cohen's d (pooled SD).

Both the Mann-Whitney U test and Welch's t-test indicated statistically significant differences for both outcomes (all $p < 0.001$). The mean difference was 0.62 points (95% CI: 0.39-0.86) for the career readiness composite and 0.66 points (95% CI: 0.40-0.91) for career-path confidence, in favour of the guidance group. Effect sizes were moderate to large (rank-biserial r = 0.49 and 0.43; Cohen's d = 0.85 and 0.80). The null hypothesis of no difference was therefore rejected for both outcomes, and because the two tests agreed, the conclusion does not depend on the distributional assumption. These are unadjusted associations from cross-sectional data and do not establish that guidance caused higher readiness.

Discussion

In this cross-sectional survey of 208 senior dental students from dental colleges in Maharashtra, about seven in 10 respondents reported confidence in their career path (n = 153, 73.6%), preparedness for the job market (n = 143, 68.8%), and a clear career plan (n = 149, 71.6%), and students who had received formal career guidance reported significantly higher career readiness and decision confidence than those who had not. Postgraduate study was the most common immediate plan (n = 107, 51.4%), and competition, scarcity of jobs, and financial instability were the dominant concerns.

The generally favourable self-ratings (agreement ranging from 143 (68.8%) to 153 (73.6%) across the three readiness items) appear at odds with the oversupply and unemployment described in the Indian dental workforce literature [1,3,4]. Several explanations are plausible. Students close to graduation may expect to defer entry into the labour market through postgraduate study, so that concerns about employment become more concrete only after qualification. A Kerala survey of interns found that apprehension about the future was higher in private institutions and lower among interns with strong aspirations and satisfaction [19], and Saudi senior students were more likely than junior students to perceive a government job, speciality admission, and private clinic establishment as career challenges [18], suggesting that perceived difficulty may change as graduation approaches. Nevertheless, between 55 (26.4%) and 65 (31.3%) of our respondents were neutral or negative on each readiness item, which is not trivial for a final-stage cohort. The polarised overall readiness rating, with 95 (45.7%) giving a score of 10 and 30 (14.4%) a score of 1, should be interpreted cautiously: it may reflect truly divergent states of readiness, extreme response styles, or varied interpretation of a single self-rated item. The Kerala study also linked inadequate institutional career guidance to concerns about the future of the profession [19].

More than half of our participants (n = 107, 51.4%) named postgraduate study as their immediate plan, and a further 22 (10.6%) were undecided. This proportion is lower than the 87.5% interest in postgraduate studies among Saudi senior students [11], the near 90% intention to pursue a graduate degree among Chinese final-year students [16], and the 94% willingness among Saudi students in an earlier survey [15], although

differences in item wording (immediate plan versus general interest) limit direct comparison. A perceived need for postgraduate qualification for career advancement has also been described in Saudi students [12]. In India, postgraduate seats are reported to be scarce relative to the number of graduates [1,5], so a preference for MDS may not translate into admission, which may help explain why high competition was the most frequent concern. Determinants of speciality and postgraduate choice reported elsewhere include family influence, preference for private practice, and the patient population served [23], as well as affordability, speciality reputation, and personal desire [24], and gender-related differences in career plans have also been described [25]. We did not collect gender or socioeconomic data and could not examine these influences. In contrast to the strong preference for government employment among Saudi students (63.2%) [11], only 19 (9.1%) of our respondents preferred a government job, which is consistent with the small share of Indian dental graduates who obtain government posts [1,4].

High competition (n = 67, 32.2%), lack of job opportunities (n = 48, 23.1%), and financial instability (n = 37, 17.8%) accounted for most concerns, in line with accounts of a saturated private market, limited government vacancies, and the cost of establishing a clinic in India [1,4,6]. Similar pressures have been reported abroad: Saudi Arabia has faced structural challenges in delivering dental care [26] alongside a growing number of graduates and unemployment among new graduates [27]. Income, regular working hours, and social status have been reported as influences on the choice of dentistry among Indian students [20,21], which may shape how financial and work-life concerns are weighed. Only 20 (9.6%) of our respondents identified lack of guidance as their main concern, even though 63 (30.3%) had received no formal guidance; students may not recognise guidance as a need until they have experienced it, a possibility that warrants qualitative exploration.

The principal finding was the consistent and sizeable difference in readiness and confidence favouring students with formal guidance (mean differences of 0.62 and 0.66 points on five-point scales; Cohen's d = 0.80 to 0.85). This is consistent with the theoretical expectation that structured guidance and mentoring strengthen career decision-making self-efficacy [7,9], a central construct in social cognitive career theory [9], and with multinational data in which career-planning training influenced career aspirations through self-efficacy and expectations [10]. Empirically, receipt of guidance was a strong predictor of interest in postgraduate studies among Saudi senior dental students (odds ratio = 6.33) [11], and Kerala interns identified a lack of effective institutional guidance [19]. Beyond dentistry, Canadian national guidelines recommend integrating career advising into medical school curricula [28]; a structured career guidance and counselling program was reported to enhance perceived job-market readiness among nursing students [29], and a lack of structured support was linked to gaps in career readiness among pharmacy students [30]. The proportion of our respondents who reported guidance (n = 145, 69.7%) was similar to that among Saudi students (63.5%) [11], which still leaves a substantial minority unsupported.

Several non-causal explanations must be considered. Respondents who feel confident may be more likely to recall or value guidance (reverse causation), and self-reported data are susceptible to recall and social desirability bias. Interns were more likely than final-year students to report guidance (80 of 106 (75.5%) vs. 65 of 102 (63.7%)); all government-college respondents reported guidance, and every respondent without guidance came from a private college, so academic level, institution type, and unmeasured characteristics such as academic performance, which was associated with career plans in a Saudi study [11], may confound the association. In addition, 'formal guidance' was self-defined, and the Q7 ratings of respondents without formal guidance (mean = 2.89) suggest that informal mentoring may also contribute.

The findings have several practical implications for dental education and career development. Dental colleges could consider incorporating structured career guidance into the final undergraduate year and compulsory rotatory internship through career counselling sessions, faculty mentoring, guidance on postgraduate entrance examinations and seat availability, practical orientation to general dental practice and clinic management, financial literacy, communication and employability skills, and information on public-sector and non-clinical career pathways. Mentoring by recent graduates and practising dentists may further help students develop realistic expectations regarding employment opportunities, postgraduate training, and professional development. Guidelines developed for medical schools may provide a useful framework for designing such initiatives [28]. At the system level, career guidance should be complemented by workforce planning, as projected workforce oversupply suggests that individual preparedness alone cannot address structural limitations in employment opportunities and postgraduate seats [3,5]. These interventions should be evaluated prospectively using validated outcome measures, such as the short form of the Career Decision-Making Self-Efficacy Scale [8], to determine their effectiveness in improving career readiness and decision confidence among dental students and interns.

Strengths and limitations

This study addresses a relevant and comparatively underexplored question in Indian dental education: the perceived career readiness and career-path confidence of students approaching the transition to professional practice. Its strengths include the inclusion of both final-year BDS students and compulsory rotatory interns, a sample exceeding the prespecified numerical target, the use of a structured questionnaire covering multiple aspects of career preparation, and reporting of effect estimates and confidence intervals for the principal comparisons. The use of the Mann-Whitney U test as the primary analysis, supported by a

supplementary Welch's t-test, provides complementary summaries of the unadjusted group differences.

Several limitations warrant consideration. Convenience sampling, the absence of a calculable response rate, and the predominance of respondents from private dental colleges limit representativeness. The questionnaire was developed for this study and was not a validated instrument; career-path confidence was measured using a single item, and the three-item readiness composite requires further psychometric evaluation. The questionnaire's response-format and coding issues require transparent reporting. The cross-sectional, self-reported design and the absence of adjustment for potential confounders limit causal interpretation. Finally, perceived readiness was assessed rather than actual employment or postgraduate admission outcomes. These findings should therefore be interpreted as exploratory and used to inform the design of future multicentre, longitudinal studies.

Conclusions

Most participants in this convenience sample of senior dental students in Maharashtra reported favourable perceptions of their career readiness and career-path confidence. Postgraduate study was the most frequently preferred immediate career pathway, while high competition and limited job opportunities were the leading concerns. Participants who reported receiving formal career guidance had higher readiness and confidence scores in unadjusted comparisons; however, the study design does not establish a causal relationship, and potential confounding remains an important consideration. Dental colleges could consider structured career counselling, faculty mentoring, and practical career-planning support, with their effectiveness evaluated prospectively using validated measures. Future multicentre studies should employ more representative sampling, assess relevant confounders, and examine whether perceived readiness translates into actual employment and postgraduate training outcomes.

Appendices

Section	Item	Response options
A. Participant information	Q1. What is your current academic year?	Final-year Bachelor of Dental Surgery (BDS) student; Compulsory rotatory intern
	Q2. What type of dental college do you study in?	Government; Private
B. Career readiness and confidence	Q3. I feel confident about my career path after completing BDS.	5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
	Q4. I feel adequately prepared to enter the dental job market after graduation.	5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
	Q5. I have a clear plan regarding my future career.	5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
C. Career guidance and influencing factors	Q6. Have you received formal career guidance from your dental college?	Yes; No
	Q7. Career guidance received during BDS has helped me in making career decisions.	5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
D. Career plans and perceptions	Q8. What is your preferred immediate career plan after BDS?	Postgraduate studies (Master of Dental Surgery, MDS); General dental practice; Government job; Private clinic (associate or ownership); Undecided
	Q9. What is your biggest concern regarding your future dental career?	Financial instability; Lack of job opportunities; High competition; Work-life balance; Lack of guidance; Other
	Q10. Overall, how ready do you feel to start a professional dental career?	Rating from 1 (not ready at all) to 10 (completely ready)

TABLE 4: Questionnaire on career readiness and decision confidence among senior dental students.

BDS: Bachelor of Dental Surgery; MDS: Master of Dental Surgery; Q: question.

Items Q1 to Q10 correspond to the results reported in Tables 1-3.

Credits: Tejas N. Bhole and Ajay Gaikwad.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Institutional Ethics Committee of Krishna Vishwa Vidyapeeth (Deemed to be University) issued approval 693/2025-2026. The study was approved by the Institutional Ethics Committee of

Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, Maharashtra, India (Protocol No. 693/2025-2026; Reference No. KVV/IEC/07/2026), dated May 15, 2026. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Yadav S, Rawal G: The current status of dental graduates in India . Pan Afr Med J. 2016, 23:22. 10.11604/pamj.2016.23.22.7381
2. Jaiswal AK, Srinivas P, Suresh S: Dental manpower in India: changing trends since 1920 . Int Dent J. 2014, 64:213-8. 10.1111/idj.12111
3. Vundavalli S: Dental manpower planning in India: current scenario and future projections for the year 2020 . Int Dent J. 2014, 64:62-7. 10.1111/idj.12063
4. Dagli N, Dagli R: Increasing unemployment among Indian dental graduates - high time to control dental manpower. J Int Oral Health. 2015, 7:i-ii.
5. Elangovan S, Allareddy V, Singh F, Taneja P, Karimbux N: Indian dental education in the new millennium: challenges and opportunities. J Dent Educ. 2010, 74:1011-6. 10.1002/j.0022-0337.2010.74.9.tb04957.x
6. Halappa M, Naveen BH, Kumar S, Sreenivasa H: SWOT analysis of dental health workforce in India: a dental alarm. J Clin Diagn Res. 2014, 8:ZE03-5. 10.7860/JCDR/2014/10313.5142
7. Taylor KM, Betz NE: Applications of self-efficacy theory to the understanding and treatment of career indecision. J Vocat Behav. 1983, 22:63-81. 10.1016/0001-8791(83)90006-4
8. Betz NE, Klein KL, Taylor KM: Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale . J Career Assess. 1996, 4:47-57. 10.1177/106907279600400103
9. Lent RW, Brown SD, Hackett G: Toward a unifying social cognitive theory of career and academic interest, choice, and performance. J Vocat Behav. 1994, 45:79-122. 10.1006/jvbe.1994.1027
10. Riad A, Elsheikh L, Domnori S, et al.: Career aspirations of dental students: insights from a multinational study using social cognitive career theory (SCCT). Front Oral Health. 2025, 6:1577870. 10.3389/froh.2025.1577870
11. Nassani MZ, Alsalhani AB, Alasmari AA, et al.: Carving the future: career aspirations of senior dental students in Saudi Arabia. Eur J Dent. 2026, 20:1014-22. 10.1055/s-0045-1812111
12. Halawany HS: Career motivations, perceptions of the future of dentistry and preferred dental specialties among Saudi dental students. Open Dent J. 2014, 8:129-35. 10.2174/1874210601408010129
13. Rashid HH, Ghotane SG, Abufanas SH, Gallagher JE: Short and long-term career plans of final year dental students in the United Arab Emirates. BMC Oral Health. 2013, 13:39. 10.1186/1472-6831-13-39
14. Ellakany P, Aly NM: Career satisfaction amongst dental students and dentists in Saudi Arabia: a cross-sectional survey. Eur J Dent Educ. 2023, 27:144-8. 10.1111/eje.12786
15. Al-Hallak KR, Nassani MZ, Heskul MM, Doumani MD, Darwish M: Reasons for choosing dentistry as a career among dental students in Saudi Arabia. Eur J Dent. 2018, 12:275-80. 10.4103/ejd.ejd_335_17
16. Xu C, Gao L, Zhang S, et al.: Motivations and future plans of the final year students in a Chinese dental school. BMC Med Educ. 2022, 22:90. 10.1186/s12909-022-03156-6
17. Nashleanas BM, McKernan SC, Kuthy RA, Qian F: Career influences among final year dental students who plan to enter private practice. BMC Oral Health. 2014, 14:18. 10.1186/1472-6831-14-18
18. Fita S, Alshuraim F, Almulhim A, AlHumaid J, Alhareky M, Nazir M: Possible future career challenges and associated factors among dental students and interns. Int J Dent. 2020, 2020:9730125. 10.1155/2020/9730125
19. Sajitha PS, Thomas S, Narayan V: Aspirations, apprehensions and the availability of career guidance among dental interns in Kerala, India. Indian J Dent Res. 2023, 34:182-6. 10.4103/ijdr.ijdr_799_22
20. Sharma N, Kabasi S, Pati AR: Perception of 1st year dental students studying in Odisha toward career choice: a cross-sectional survey. J Indian Assoc Public Health Dent. 2015, 13:449-53. 10.4103/2319-5932.171163
21. Aditya S: Motivations and future aspirations of dental interns: a cross-sectional study . SRM J Res Dent Sci. 2013, 4:114-8. 10.4103/0976-433X.121635
22. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP: The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. Lancet. 2007, 370:1453-7. 10.1016/S0140-6736(07)61602-X
23. Halawany HS, Binassfour AS, AlHassan WK, Alhejaily RA, Al Maflehi N, Jacob V, Abraham NB: Dental specialty, career preferences and their influencing factors among final year dental students in Saudi Arabia. Saudi Dent J. 2017, 29:15-23. 10.1016/j.sdentj.2016.12.001
24. Alrashdan MS, Alazzam M, Alkhader M, Phillips C: Career perspectives of senior dental students from different backgrounds at a single Middle Eastern institution. BMC Med Educ. 2018, 18:283. 10.1186/s12909-018-1386-9
25. Pullishery F, Alhejoury HA, Ahmed TH, Allugmani WA, Alrowaily GS, Aljohani DD, Alshehab BA: Perception of dental students on gender preferences in career choice, plans, and expectations in dentistry in the Kingdom of Saudi Arabia. J Pharm Bioallied Sci. 2021, 13:S821-5. 10.4103/jpbs.JPBS_803_20
26. Almajed OS, Aljouie A, Alghamdi R, Alabdulwahab FN, Laheq MT: Transforming dental care in Saudi Arabia: challenges and opportunities. Cureus. 2024, 16:e54282. 10.7759/cureus.54282
27. Alqahtani AS, Alqhtani NR, Gufran K, et al.: Analysis of trends in demographic distribution of dental workforce in the Kingdom of Saudi Arabia. J Healthc Eng. 2022, 2022:5321628. 10.1155/2022/5321628

28. Howse K, Harris J, Dalgarno N: Canadian national guidelines and recommendations for integrating career advising into medical school curricula. Acad Med. 2017, 92:1543-8. 10.1097/ACM.0000000000001720
29. Alnajjar HA, Abou Hashish EA: Exploring the effectiveness of the Career Guidance and Counseling Program on the perceived readiness for the job market: a lived experience among nursing students. Front Public Health. 2024, 12:1403730. 10.3389/fpubh.2024.1403730
30. Almalki OS, Alqarni TA, Alharthi RM, Algarni MA, Mohamed Ibrahim MI, Asiri YA, Fathelrahman AI: Career readiness among Saudi pharmacy students: exploring the need for and the impact of career counseling services. Adv Med Educ Pract. 2022, 13:1267-77. 10.2147/AMEP.S375929