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Impact of armed – conflict and dental environment stress among the Kashmiri dental students

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Abstract

Background: Mental, physical and social health, are vital strands of life that are closely interwoven and deeply interdependent. Exposure to armed conflict can create detrimental effects on both physical and mental health. Health Sciences Education seems to be the most stressful which affects the academic performance and quality of life of the dental students.

Aims: This study attempted to evaluate the perceived stress among Kashmiri dental students and to explore the association of the armed conflict on the perceived stress.

Methods: This cross-sectional study involved all the dental students of a dental institute in Kashmir. Data was collected using 55 – item pretested modified Dental environmental stress (DES) questionnaire, to assess the sources of stress and its severity. Descriptive statistics were used to describe the study and outcome variables. Mann–Whitney and Kruskal–Wallistest was used for statistical analysis.

Results: A total of 115 dental students participated in this study. The highest fraction of the stress was attributed to “Armed – Conflict “and “Professional/ Career” along with “Clinic/ Patient” related stress. In general, females, married and third year students scored significantly higher stress than their counterparts. Regression analysis revealed that the professional year was the most significant independent determinant for most of the DES domains.

Conclusion: The findings of this research indicate that the level of the stress across dental students in Kashmir may be considered moderate to high. Armed – Conflict in the region has further intensified this stress.

Keywords: dental environment stress questionnaire, armed – conflict stress, Kashmir, dental psychology, dental education

Introduction

Stress is a subjective sensation with a varied degree of perception ^[1]. It includes a wide range of strong external stimuli, both physiological and psychological ^[2]. Higher education related to the health sciences poses a substantial amount of stress for enrolled students ^[3, 5]. In this context, dental schools are considered highly stressful learning environments ^[6, 8]. Stress related clinical disorders such as burnout, anxiety and depression are also seen. These disorders affect their academic performance by decreasing their academic performance by decreasing their attention span and affecting their decision making skill ^[9, 11]. Stress in medical students is receiving attention because it has been recognized that tired, tense doctors may not provide high-quality care ^[12]. Social and cultural background can be expected to provoke or modify stress among dental students ^[13]. With no doubt, armed and political conflicts have direct and indirect negative consequences on society, including college students ^[14].

Kashmir is considered to be one of the most likely places on the earth to witness a potential breakout of major conflict at any point of time ^[15]. The ongoing armed conflict over the past two and half decades has pushed Kashmir into a cycle of violence and resultant trauma has devastating consequences involving multiple psychological, social, economic and environmental challenges to integrity of an individual and to public life ^[16]. There is a dearth of work regarding war – related stress among dental students. Hence, determining the stress provoking factors is very important; it will give policy-makers, academic staff and administrators a comprehensive knowledge to modify teaching curricula and/or environment in such a way to be more conducive to students’ learning.

In this context, the present study aims to evaluate the perceived dental environment-induced stress and sources of such stress among undergraduate dental students in Kashmir, and to explore whether the current armed conflict adds to perceived stress

Material and Methods

Study design

This institutional cross-sectional study was conducted during 2019 – 20 academic year, at a dental college in Kashmir. Study population consisted of all the students and junior residents of the dental college. The purpose of the study was explained well in advance to the students before the start of the study and informed consent was obtained from the participants. Ethical approval for conducting the study was obtained from the Ethics and Research Committee of the College (No.GDC/Perio/991).

Measurement and instrument

The study instrument used was based on the Dental Environment Stress (DES) questionnaire [17]. The DES questionnaire was modified to make it applicable to the present study population. Apart from the demographic data, it comprised of 42 items grouped under seven stress provoking domains as follows: academic performance (seven items), Clinic/patient (eight items), faculty/ institution (seven items), personal issues (six items), accommodation/surrounding environment (eight items), professional/career (six items). An extra 13 items were included to reflect the extent of stress due to armed – conflict in Kashmir; they were referred to as

"Armed- conflict related stress" domain [18, 20]. Responses to each item in the questionnaire were recorded on a three-point Likert scale with 1 = no stress, 2 = moderate stress, and 3 = severe stress.

Statistical analysis: The data were analysed using the Statistical Package for the Social Sciences Statistical Software (SPSS version 20.0). Descriptive statistics (Proportion, mean and standard deviation) were used to describe the study and outcome variables. The summary scores of the individual domains and of the overall DES, presented as means and SDs, were considered as the dependent variables. Gender and professional year were considered as independent variables. Mann–Whitney test was used to determine the significant differences between genders and marital status. Kruskal–Wallis test was employed to determine significant differences between professional years. Multiple linear regression analyses were then conducted to determine the independent determinants. The level of significance was set at $P < 0.05$

Results

Demographic profile

A total of 115 out of the 216 students participated in the study giving an overall response rate of 53.24%. The mean age estimated was 25.20 ± 2.72 years (range = 19–34 years). Almost 52.2% ($n = 60$) of the participants were females and only 8.7% ($n = 10$) were married. The highest proportion of participation was from the Interns (approximately 28.7%, $n = 33$) while the lowest was from 2nd year (3.5%, $n = 4$) (Table 1).

Table I: Socio - demographic characteristics of the study population

Variables	n (%)
Gender	
Male	55 (47.8)
Female	60 (52.2)
Marital Status	
Unmarried	105 (91.3)
Married	10 (8.7)
Professional Year	
1 st Year	7 (6.1)
2 nd Year	4 (3.5)
3 rd Year	13 (11.3)
4 th Year	15 (13.0)
Intern	33 (28.7)
Junior Resident	19 (16.5)
1 st Year Post Graduate Student	11 (9.6)
2 nd Year Post Graduate Student	7 (6.1)
3 rd Year Post Graduate Student	6 (5.2)
Age (years)	
Mean (\pm SD)	25.20 (\pm 2.718)
Median	25.00
Range	19-34
Total Population	115

Stress levels

Stress scores for each item under each domain (factors) are summarized in Table II. The highest fraction of the stress were attributed to "Armed – Conflict related stress" and "Professional/ Career related stress" along with " Clinic/ Patient related stress" respectively. Two items in Armed – Conflict domain that scored the highest scores were, "Do you feel stressful while living in this conflict situation?" (Mean=

2.67, SD 0.63) and "Your family worries about you when you go to the college due to the current armed conflict circumstances" (Mean =2.63, SD 0.71) respectively. Unemployment fear (Mean =2.65, SD 0.66) scored the highest in the Professional/ Career related stress domain of DES. However, the leastscoring stress items were; Necessity to postpone having children (Mean=0.68, SD 0.89), and marital adjustment problems (Mean=0.78, SD 0.90).

Table 2: Mean Scores of Stress among Study Participants according to modified DES domains

Domain	Stressor	Mean (\pm SD)
Academic Performance Stress	Amount of assigned class work (Q1)	1.91(\pm 0.90)
	Lack of time to do assigned work(Q2)	1.94(\pm 0.92)
	Lack of time between tests/lab/clinics(Q3)	1.95(\pm 1.06)
	Fear of failing a course or the year (Q4)	2.18 (\pm 1.02)
	Competition for grades (Q5)	1.71 (\pm 0.93)
	Difficulty in understanding lectures (Q6)	1.57 (\pm 0.87)
	Language barrier (Q7)	1.23 (\pm 0.88)
Clinic/patient related stress	Difficulty in learning clinical procedures (Q8)	1.75(\pm 0.67)
	Patients being late or not showing for their appointments (Q9)	1.81(\pm 0.85)
	Responsibility of getting suitable patients (Q10)	1.96(\pm 0.82)
	Shortage of allocated clinical time (Q11)	1.82(\pm 0.78)
	Transition from pre-clinic to clinic work (Q12)	1.64(\pm 0.85)
	Lack of cooperation by patients in their home care (Q13)	1.77(\pm 0.77)
	Completion of clinical cases/quota(Q14)	2.20(\pm 0.81)
Faculty/institution related stress	Lack of confidence in clinical decision making (Q15)	1.78(\pm 0.76)
	Atmosphere created by faculty(Q16)	2.16(\pm 0.86)
	Criticism by teachers(Q17)	2.08(\pm 0.80)
	Communication/approachability of teachers(Q18)	1.91 (\pm 0.82)
	Indifferent/biased behaviour(Q19)	2.01(\pm 0.87)
	Lack of cooperation of technical staff(Q20)	1.86 (\pm 0.89)
	Getting study material(Q21)	1.57 (\pm 0.90)
Personal issues related to stress	Inconsistency of feedback on work between different instructors(Q22)	1.80 (\pm 0.85)
	Financial responsibilities(Q23)	1.76 (\pm 0.90)
	Forced postponement of marriage or engagement (Q24)	1.19 (\pm 1.03)
	Lack of time for relaxation (Q25)	1.90 (\pm 0.79)
	Marital adjustment problems (Q26)	0.78 (\pm 0.90)
	Necessity to postpone having children(Q27)	0.68 (\pm 0.89)
Accommodation /surrounding environment related stress	Parental pressure/expectations(Q28)	1.90 (\pm 0.92)
	Living away from home(Q29)	2.00 (\pm 1.01)
	Making Friends(Q30)	1.30 (\pm 0.74)
	Lack of home atmosphere in living quarters(Q31)	1.76 (\pm 1.03)
	Accommodation environment not conducive for studying(Q32)	1.61 (\pm 0.91)
	Lack of recreational facilities(Q33)	1.90 (\pm 0.88)
	Compatibility with roommates(Q34)	1.27 (\pm 0.87)
Professional/Career related stress	Food quality satisfaction(Q35)	2.17 (\pm 0.91)
	Traveling to college and back(Q36)	1.76 (\pm 0.94)
	Unemployment fear(Q37)	2.65 (\pm 0.66)
	Expectations from professional school versus reality(Q38)	2.41 (\pm 0.65)
	Lack of confidence to be a successful dentist (Q39)	1.97 (\pm 0.82)
	Possibility to pursue post-graduation(Q40)	1.97 (\pm 0.99)
Armed – Conflict related stress	Clinic set up(Q41)	1.88 (\pm 0.93)
	Lack of confidence in career decision(Q42)	2.00 (\pm 0.84)
	Study irregularity due to the current armed conflict circumstances (Q43)	2.59(\pm 0.72)
	Difficult availability of transportation due to the current armed conflict circumstances(Q44)	2.54 (\pm 0.76)
	Effect of the armed conflict circumstances on your decision to complete your study(Q45)	2.52 (\pm 0.75)
	Absence, lateness and/or scarcity of patients due to the current armed conflict circumstances(Q46)	2.12 (\pm 0.89)
	Losing one or more of your relatives due to the armed conflict(Q47)	1.80 (\pm 1.23)
	Being hit with a bullet/pellet or any other explosive (Q48)	1.68 (\pm 1.25)
	Absence of academic staff due to the current armed conflict circumstances(Q49)	1.63 (\pm 0.86)
	Hearing sounds of explosions and/or roar of jets(Q50)	2.34 (\pm 0.80)
	Being forced to be absent from the college for a while due to the current armed conflict circumstances(Q51)	2.17 (\pm 0.89)
	Financial difficulties imposed by the current armed conflict circumstances make it hard for you to get the college requirements such as materials and books.....etc(Q52)	2.28 (\pm 0.85)
	Your family's worries about you when you go to the college due to the current armed conflict circumstances(Q53)	2.63 (\pm 0.71)
	Being forced to postpone some important plans (e.g. engagement or marriage) because due to the current armed conflict circumstances(Q54)	1.81 (\pm 1.20)
Do you feel stressful while living in this conflict situation (Q55)	2.67 (\pm 0.63)	

Table 3: Comparison of modified DES domains by Gender and Marital Status

Domain	Stressor	Gender		Sig. level	Marital Status		Sig. level
		Male	Female		Single	Married	
		Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Academic Performance Stress	Q1	1.96 (± 0.90)	1.87 (± 0.91)	.519	1.90 (± 0.93)	2.10 (± 0.57)	.684
	Q2	2.02 (± 0.91)	1.87 (± 0.93)	.322	1.94 (± 0.95)	1.90 (± 0.57)	.551
	Q3	1.84 (± 1.01)	2.05 (± 1.10)	.154	1.98 (± 1.08)	1.60 (± 0.70)	.101
	Q4	2.05 (± 0.99)	2.30 (± 1.05)	.082	2.16 (± 1.04)	2.40 (± 0.84)	.538
	Q5	1.65 (± 0.95)	1.77 (± 0.93)	.453	1.74 (± 0.95)	1.40 (± 0.70)	.161
	Q6	1.55 (± 0.86)	1.58 (± 0.89)	.673	1.57 (± 0.90)	1.50 (± 0.53)	.752
	Q7	1.27 (± 0.93)	1.20 (± 0.84)	.639	1.24 (± 0.90)	1.20 (± 0.63)	.866
Clinic/patient related stress	Q8	1.67 (± 0.72)	1.82 (± 0.62)	.282	1.76 (± 0.67)	1.60 (± 0.70)	.391
	Q9	1.76 (± 0.82)	1.85 (± 0.88)	.446	1.82 (± 0.86)	1.70 (± 0.68)	.572
	Q10	1.91 (± 0.80)	2.00 (± 0.84)	.452	1.95 (± 0.81)	2.00 (± 0.94)	.907
	Q11	1.80 (± 0.78)	1.83 (± 0.79)	.823	1.85 (± 0.78)	1.50 (± 0.70)	.124
	Q12	1.62 (± 0.93)	1.67 (± 0.77)	.710	1.64 (± 0.87)	1.70 (± 0.82)	.971
	Q13	1.67 (± 0.84)	1.87 (± 0.70)	.167	1.78 (± 0.80)	1.70 (± 0.48)	.607
	Q14	2.15 (± 0.76)	2.25 (± 0.86)	.298	2.19 (± 0.82)	2.30 (± 0.68)	.812
Faculty/institution related stress	Q15	1.71 (± 0.79)	1.85 (± 0.73)	.313	1.77 (± 0.76)	1.90 (± 0.74)	.672
	Q16	2.04 (± 0.94)	2.27 (± 0.78)	.227	2.12 (± 0.89)	2.50 (± 0.53)	.243
	Q17	1.96 (± 0.82)	2.18 (± 0.77)	.145	2.08 (± 0.81)	2.10 (± 0.74)	.954
	Q18	1.87 (± 0.86)	1.95 (± 0.79)	.643	1.90 (± 0.83)	2.00 (± 0.82)	.760
	Q19	1.91 (± 0.91)	2.10 (± 0.84)	.260	2.02 (± 0.87)	1.90 (± 0.99)	.663
	Q20	1.76 (± 0.86)	1.95 (± 0.91)	.202	1.87 (± 0.90)	1.80 (± 0.79)	.746
	Q21	1.67 (± 0.86)	1.48 (± 0.93)	.350	1.57 (± 0.93)	1.60 (± 0.52)	.884
Personal issues related to stress	Q22	1.67 (± 0.86)	1.92 (± 0.83)	.111	1.82 (± 0.88)	1.60 (± 0.52)	.365
	Q23	1.78 (± 0.96)	1.73 (± 0.86)	.775	1.75 (± 0.91)	1.80 (± 0.92)	.830
	Q24	1.45 (± 1.07)	0.95 (± 0.95)	.010*	1.15 (± 1.03)	1.60 (± 1.08)	.177
	Q25	1.98 (± 0.81)	1.83 (± 0.79)	.303	1.87 (± 0.80)	2.30 (± 0.68)	.097
	Q26	0.95 (± 0.97)	0.63 (± 0.82)	.073	0.70 (± 0.88)	1.60 (± 0.84)	.002*
	Q27	0.78 (± 0.90)	0.58 (± 0.89)	.136	0.58 (± 0.84)	1.70 (± 0.82)	.000*
	Q28	1.93 (± 0.94)	1.88 (± 0.90)	.762	1.90 (± 0.94)	2.00 (± 0.67)	.835
Accommodation /surrounding environment related stress	Q29	1.96 (± 0.96)	2.03 (± 1.06)	.549	2.04 (± 1.01)	1.60 (± 0.97)	.147
	Q30	1.24 (± 0.69)	1.37 (± 0.78)	.422	1.30 (± 0.76)	1.30 (± 0.48)	.728
	Q31	1.80 (± 0.97)	1.72 (± 1.09)	.766	1.75 (± 1.05)	1.80 (± 0.92)	.975
	Q32	1.62 (± 0.91)	1.60 (± 0.91)	.881	1.62 (± 0.93)	1.50 (± 0.53)	.676
	Q33	1.91 (± 0.87)	1.90 (± 0.90)	.988	1.92 (± 0.91)	1.70 (± 0.48)	.324
	Q34	1.22 (± 0.83)	1.32 (± 0.91)	.535	1.29 (± 0.90)	1.10 (± 0.57)	.594
	Q35	2.18 (± 0.93)	2.15 (± 1.07)	.792	2.20 (± 1.00)	1.80 (± 0.92)	.102
Professional/Career related stress	Q36	2.00 (± 0.88)	1.53 (± 0.95)	.008*	1.72 (± 0.94)	2.10 (± 0.99)	.263
	Q37	2.53 (± 0.77)	2.77 (± 0.53)	.065	2.66 (± 0.66)	2.60 (± 0.70)	.729
	Q38	2.27 (± 0.73)	2.53 (± 0.54)	.067	2.41 (± 0.65)	2.40 (± 0.70)	.987
	Q39	1.78 (± 0.74)	2.15 (± 0.86)	.014*	2.00 (± 0.82)	1.70 (± 0.82)	.243
	Q40	1.71 (± 0.98)	2.22 (± 0.96)	.003*	2.03 (± 0.99)	1.40 (± 0.97)	.049*
	Q41	1.67 (± 0.90)	2.07 (± 0.92)	.016*	1.93 (± 0.92)	1.30 (± 0.82)	.032*
	Q42	1.91 (± 0.85)	2.08 (± 0.83)	.275	2.05 (± 0.84)	1.50 (± 0.71)	.036*
Armed – Conflict related stress	Q43	2.51 (± 0.78)	2.67 (± 0.68)	.218	2.59 (± 0.74)	2.60 (± 0.52)	.620
	Q44	2.62 (± 0.59)	2.47 (± 0.89)	.695	2.55 (± 0.75)	2.40 (± 0.97)	.628
	Q45	2.56 (± 0.74)	2.48 (± 0.77)	.479	2.51 (± 0.76)	2.60 (± 0.70)	.784
	Q46	2.35 (± 0.78)	1.92 (± 0.94)	.012*	2.15 (± 0.90)	1.80 (± 0.79)	.154
	Q47	1.76 (± 1.23)	1.83 (± 1.25)	.819	1.85 (± 1.22)	1.30 (± 1.42)	.178
	Q48	1.67 (± 1.20)	1.68 (± 1.31)	.851	1.67 (± 1.27)	1.80 (± 1.14)	.872
	Q49	1.64 (± 0.91)	1.63 (± 0.82)	.983	1.63 (± 0.86)	1.70 (± 0.95)	.796
	Q50	2.13 (± 0.90)	2.53 (± 0.65)	.013*	2.38 (± 0.80)	1.90 (± 0.74)	.037*
	Q51	2.15 (± 0.91)	2.20 (± 0.88)	.769	2.20 (± 0.87)	1.90 (± 1.10)	.403
	Q52	2.22 (± 0.99)	2.33 (± 0.71)	.951	2.26 (± 0.87)	2.50 (± 0.71)	.432
	Q53	2.58 (± 0.79)	2.67 (± 0.63)	.639	2.65 (± 0.68)	2.40 (± 0.97)	.335
	Q54	1.93 (± 1.17)	1.70 (± 1.23)	.321	1.79 (± 1.21)	2.00 (± 1.16)	.577
	Q55	2.55 (± 0.74)	2.78 (± 0.49)	.046*	2.69 (± 0.63)	2.50 (± 0.71)	.288

*Statistical significance at $p < 0.05$

Stress associated variables

Male students perceived less stress except for forced postponement of marriage or engagement (Mean=1.45, SD 1.07), travelling back to college and absence (Mean=2.00, SD 0.88), lateness and/ or scarcity of patients due to current armed conflict circumstances (Mean=2.35, SD 0.78). However, the DES Scores were higher among female students. The mean value of stress were statistically significant for items; Lack of confidence to be a successful dentist (Mean=2.15, SD 0.86), possibility to pursue post –

graduation (Mean=2.22, SD 0.96), clinic set up (Mean=2.07, SD 0.92), hearing sounds of explosion and/or roaring of jets (Mean=2.53, SD 0.65) and Do you feel stressful while living in this conflict situation (Mean=2.78, SD 0.49) (Table III).

Marriage can be perceived as a life changing stressful event because of the new demands and the adjustments. Out of the 55 items used to assess stress, the stressor under the title of Personal Issues related Stress domain; Marital adjustment problems (Mean = 1.60, SD 0.84) and necessity to postpone having children (Mean = 1.70, SD 0.82) significantly differed

between married and single study subjects. On the contrary, professional/ career related stress was higher among single/unmarried students (Table III).

Comparing the level of stress across each of the professional years, the first year students observed the least while as third year students perceived the highest stress among most of the domains of the DES. The highest stressors across the professional years were from Armed- Conflict related stress, followed by Clinic/ patient related stress and Academic performance stress (Table IV).

There were some statistically significant differences between

the levels of stress for specific stressors across the professional years. “Study irregularity due to the current armed conflict circumstances (Mean = 3.00, SD 0.00)” and “Your family worries about you when you go to the college due to the current armed conflict circumstances (Mean = 2.80, SD 0.78)” scored highest among Third year students. Interns found “learning clinical procedures (Mean = 2.60, SD 0.70)” more significantly stressful than rest of the professional years. Compared to all other years, first-year students were the least stressed concerning “Transition from pre-clinic to clinic work (Mean = 0.43, SD 0.54)” (Table IV).

Table 4: Comparison of modified DES domains by Professional Years

Domain	Stressor	Ist Year	IInd Year	IIIRD Year	IVth Year	Intern	Junior Resident	Ist Year PG	IInd Year PG	IIIRD Year PG	Sig. Level
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Academic Performance Stress	Q1	2.00(± 0.58)	2.25(±0.50)	2.69(± 0.48)	2.00(± 0.54)	1.76(± 1.09)	1.37(±1.12)	1.91(± 0.30)	2.00(±0.82)	2.17(± 0.75)	.018*
	Q2	2.29(± 0.76)	2.00(± 0.82)	2.31(± 0.75)	2.20(± 0.56)	1.94(± 1.09)	1.32(± 1.16)	1.82(± 0.41)	2.14(± 0.69)	2.00(±0.63)	.201
	Q3	1.29(± 0.76)	2.25(± 0.96)	2.77(± 0.60)	2.27(± 0.80)	1.82(± 1.24)	1.53(± 1.31)	1.91(± 0.70)	2.14(± 0.38)	1.83(± 0.98)	.024*
	Q4	2.57(± 0.79)	2.50(± 0.58)	2.62(± 0.65)	2.40(± 0.74)	1.85(± 1.18)	1.89(± 1.37)	2.27(± 0.79)	2.29(± 0.76)	2.50(± 0.84)	.486
	Q5	1.14(± 0.90)	1.75(± 0.96)	2.31(± 0.95)	2.00(± 0.76)	1.70(± 1.02)	1.32(± 1.00)	1.64(± 0.67)	1.57(± 0.79)	2.00(± 0.63)	.078
	Q6	1.71(± 0.76)	1.50(± 0.58)	2.23(± 0.73)	1.27(± 0.46)	1.52(± 0.97)	1.32(± 1.11)	1.36(± 0.51)	1.71(± 0.76)	2.00(± 0.89)	.103
	Q7	1.43(± 0.79)	2.00(± 1.16)	1.62(± 1.04)	1.07(± 0.26)	1.18(± 0.95)	0.84(± 0.90)	1.09(± 0.54)	1.71(± 0.95)	1.33(± 1.03)	.149
Clinic/patient related stress	Q8	0.86(± 0.38)	1.75(± 0.50)	1.85(± 0.56)	1.53(± 0.52)	2.06(± 0.70)	1.79(± 0.63)	1.55(± 0.69)	1.86(± 0.69)	1.50(± 0.55)	.002*
	Q9	0.86(± 0.38)	1.00(± 1.16)	2.31(± 1.11)	1.87(± 0.74)	1.94(± 0.79)	1.84(± 0.60)	1.18(± 0.60)	2.14(± 0.90)	2.17(± 0.41)	.001*
	Q10	1.14(± 0.69)	0.75(± 0.96)	2.54(± 0.52)	2.00(± 0.76)	2.06(± 0.75)	1.95(± 0.85)	1.55(± 0.82)	2.29(± 0.76)	2.17(± 0.41)	.003*
	Q11	1.29(± 0.76)	0.75(± 0.96)	2.00(± 0.71)	1.73(± 0.59)	2.06(± 0.79)	1.84(± 0.77)	1.55(± 0.67)	2.00(± 0.82)	1.83(± 0.75)	.076
	Q12	0.43(± 0.54)	0.50(± 0.58)	1.38(± 0.51)	1.80(± 0.56)	1.85(± 0.87)	1.79(± 0.86)	1.91(± 0.70)	1.86(± 0.69)	1.67(± 1.21)	.001*
	Q13	1.00(± 1.00)	1.00(± 1.16)	1.69(± 0.63)	1.47(± 0.64)	2.09(± 0.68)	1.84(± 0.77)	1.45(± 0.52)	2.14(± 0.69)	2.33(± 0.52)	.002*
	Q14	1.29(± 0.76)	1.25(± 1.50)	2.85(± 0.38)	2.47(± 0.64)	2.12(± 0.70)	2.05(± 0.91)	2.18(± 0.75)	2.71(± 0.49)	2.17(± 0.41)	.001*
Faculty/institution related stress	Q15	0.86(± 0.69)	0.75(± 0.96)	1.92(± 0.49)	1.87(± 0.52)	2.03(± 0.81)	1.89(± 0.66)	1.45(± 0.52)	2.14(± 0.90)	1.50(± 0.55)	.003*
	Q16	1.43(± 0.79)	2.00(± 0.82)	2.85(± 0.56)	1.87(± 0.92)	2.12(± 0.78)	2.21(± 0.92)	2.00(± 0.78)	2.14(± 1.22)	2.67(± 0.52)	.013*
	Q17	1.57(± 0.54)	1.75(± 0.96)	2.54(± 0.66)	1.80(± 0.94)	2.06(± 0.75)	2.32(± 0.82)	1.91(± 0.83)	2.29(± 0.76)	2.00(± 0.63)	.132
	Q18	1.71(± 0.49)	1.75(± 0.50)	2.15(± 0.99)	1.73(± 0.96)	1.73(± 0.84)	2.00(± 0.88)	2.09(± 0.70)	2.43(± 0.54)	2.00(± 0.63)	.511
	Q19	1.71(± 0.76)	1.75(± 0.50)	2.46(± 0.78)	1.40(± 0.99)	2.03(± 0.77)	2.37(± 0.83)	1.73(± 0.91)	2.14(± 0.90)	2.17(± 0.98)	.049*
	Q20	1.29(± 0.49)	2.00(± 0.82)	1.77(± 0.60)	1.73(± 0.96)	1.79(± 1.08)	2.11(± 0.81)	1.91(± 0.83)	2.29(± 0.76)	2.00(± 0.89)	.523
	Q21	1.00(± 0.58)	2.00(± 0.82)	1.15(± 0.69)	1.13(± 0.92)	1.61(± 0.97)	1.68(± 0.75)	2.00(± 0.78)	2.29(± 0.76)	1.83(± 1.17)	.015*
Personal issues related to stress	Q22	1.29(± 0.49)	1.50(± 1.29)	1.85(± 0.38)	1.67(± 1.05)	1.85(± 0.94)	1.89(± 0.74)	1.73(± 0.79)	2.29(± 0.76)	1.83(± 1.17)	.551
	Q23	0.86(± 0.38)	2.25(± 0.98)	1.62(± 0.77)	1.20(± 0.86)	1.79(± 0.96)	1.89(± 0.94)	2.36(± 0.51)	2.00(± 0.82)	2.17(± 0.75)	.004*
	Q24	1.00(± 0.58)	0.75(± 0.96)	0.31(± 0.63)	0.93(± 0.80)	1.15(± 1.03)	1.53(± 1.31)	1.55(± 0.69)	2.14(± 0.90)	1.67(± 1.03)	.004*
	Q25	1.71(± 0.49)	1.50(± 0.58)	1.85(± 0.90)	1.73(± 1.03)	1.76(± 0.79)	2.21(± 0.63)	2.09(± 0.83)	2.14(± 0.90)	2.17(± 0.41)	.422
	Q26	0.71(± 0.76)	0.50(± 0.58)	0.08(± 0.28)	0.73(± 0.70)	0.88(± 0.86)	1.05(± 1.27)	0.73(± 0.79)	0.86(± 0.90)	1.33(± 1.21)	.126
	Q27	0.57(± 0.54)	0.25(± 0.50)	0.00(± 0.00)	0.80(± 0.78)	0.70(± 0.81)	0.79(± 1.18)	0.73(± 1.01)	0.86(± 0.90)	1.50(± 1.23)	.054
	Q28	1.29(± 0.95)	2.50(± 0.58)	2.62(± 0.65)	1.47(± 0.83)	1.85(± 0.91)	2.11(± 1.15)	1.55(± 0.52)	2.14(± 0.69)	1.83(± 0.75)	.006*
Accommodation /surrounding environment related stress	Q29	2.14(± 0.38)	2.50(± 0.58)	2.69(± 0.75)	1.87(± 1.06)	1.85(± 1.00)	1.74(± 1.15)	1.64(± 1.21)	2.43(± 0.79)	2.17(± 0.98)	.117
	Q30	0.86(± 0.38)	1.25(± 0.50)	2.31(± 0.95)	1.07(± 0.59)	1.12(± 0.60)	1.42(± 0.84)	1.09(± 0.30)	1.29(± 0.49)	1.33(± 0.52)	.003*
	Q31	1.43(± 0.54)	1.50(± 0.58)	2.00(± 1.23)	1.47(± 1.13)	1.67(± 1.05)	1.84(± 1.12)	1.45(± 0.82)	2.57(± 0.79)	2.33(± 0.82)	.189
	Q32	1.14(± 0.38)	1.75(± 0.96)	1.31(± 0.86)	1.73(± 0.96)	1.61(± 0.93)	1.89(± 0.99)	1.27(± 0.79)	2.14(± 0.69)	1.50(± 1.05)	.208
	Q33	1.43(± 0.52)	2.50(± 0.58)	2.46(± 0.98)	1.87(± 1.13)	1.67(± 0.96)	1.95(± 0.52)	1.82(± 0.75)	2.29(± 0.76)	1.83(± 0.75)	.061
	Q34	1.29(± 0.49)	2.25(± 0.50)	1.77(± 0.73)	1.20(± 0.86)	1.21(± 0.82)	1.47(± 1.12)	0.73(± 0.47)	0.71(± 0.76)	1.00(± 0.89)	.014*
	Q35	2.57(± 0.54)	2.75(± 0.50)	2.69(± 0.48)	2.13(± 1.19)	2.00(± 1.06)	1.89(± 1.05)	1.82(± 1.08)	2.57(± 0.79)	2.17(± 1.17)	.165
Professional/ Career related stress	Q36	1.43(± 0.79)	2.00(± 0.82)	1.15(± 0.80)	1.80(± 1.08)	1.88(± 0.99)	1.74(± 0.87)	1.91(± 1.04)	2.14(± 0.90)	1.83(± 0.75)	.336
	Q37	2.00(± 0.82)	2.50(± 1.00)	2.85(± 0.56)	2.53(± 0.92)	2.76(± 0.61)	2.79(± 0.42)	2.64(± 0.51)	2.71(± 0.49)	2.33(± 0.82)	.086
	Q38	2.00(± 0.82)	2.50(± 0.58)	2.69(± 0.48)	2.40(± 0.74)	2.39(± 0.61)	2.47(± 0.51)	2.36(± 0.92)	2.29(± 0.76)	2.33(± 0.52)	.730
	Q39	1.71(± 0.49)	1.75(± 0.96)	2.69(± 0.63)	1.67(± 0.72)	2.18(± 0.77)	1.95(± 0.85)	1.64(± 0.81)	1.71(± 0.95)	1.50(± 0.84)	.009*
	Q40	1.43(± 0.79)	2.00(± 0.82)	2.54(± 0.66)	2.13(± 0.52)	2.30(± 0.81)	2.37(± 0.96)	0.73(± 0.79)	1.29(± 1.38)	1.00(± 0.89)	.000*
	Q41	1.14(± 0.38)	2.00(± 0.82)	2.31(± 1.03)	1.67(± 1.11)	2.15(± 0.83)	1.74(± 1.10)	1.55(± 0.52)	1.86(± 0.69)	1.83(± 0.98)	.076
	Q42	1.29(± 0.76)	2.00(± 0.82)	2.38(± 0.87)	1.80(± 0.86)	2.18(± 0.78)	2.11(± 0.94)	1.64(± 0.67)	1.86(± 0.90)	2.00(± 0.63)	.122
Armed –Conflict Related Stress	Q43	1.43(± 1.13)	3.00(± 0.00)	3.00(± 0.00)	2.53(± 0.64)	2.58(± 0.83)	2.68(± 0.49)	2.73(± 0.47)	2.57(± 0.54)	2.50(± 0.84)	.020*
	Q44	2.14(± 0.69)	2.75(± 0.50)	2.85(± 0.38)	2.53(± 0.83)	2.64(± 0.78)	2.58(± 0.61)	2.45(± 0.93)	2.29(± 0.76)	2.00(± 1.27)	.221
	Q45	2.14(± 1.07)	2.00(± 0.82)	3.00(± 0.00)	2.53(± 0.74)	2.52(± 0.83)	2.63(± 0.50)	2.55(± 0.82)	2.57(± 0.54)	1.83(± 0.98)	.078
	Q46	1.57(± 0.54)	1.50(± 1.29)	2.15(± 1.21)	2.33(± 0.90)	2.42(± 0.79)	2.05(± 0.78)	1.73(± 1.10)	2.14(± 0.39)	1.83(± 0.41)	.066
	Q47	1.29(± 0.95)	1.75(± 1.50)	2.23(± 1.30)	1.53(± 1.41)	2.00(± 1.06)	1.95(± 1.27)	1.45(± 1.51)	1.43(± 1.27)	1.67(± 1.21)	.650
	Q48	1.29(± 0.95)	1.50(± 1.73)	2.31(± 1.18)	1.60(± 1.40)	1.61(± 1.30)	1.79(± 1.27)	1.73(± 1.19)	1.29(± 1.25)	1.50(± 1.05)	.672
	Q49	1.43(± 0.79)	1.75(± 0.96)	1.77(± 1.01)	1.53(± 1.06)	1.73(± 0.67)	1.58(± 1.02)	1.45(± 1.04)	1.71(± 0.76)	1.67(± 0.52)	.997
	Q50	1.86(± 1.07)	2.25(± 0.96)	2.62(± 0.65)	2.47(± 0.92)	2.48(± 0.67)	2.21(± 0.86)	2.09(± 0.94)	2.14(± 0.69)	2.33(± 0.82)	.480
	Q51	1.57(± 0.98)	3.00(± 0.00)	2.54(± 0.88)	2.60(± 0.63)	2.15(± 0.91)	2.11(± 0.74)	1.91(± 1.04)	2.00(± 0.82)	1.50(± 1.05)	.016*
	Q52	1.43(± 1.13)	1.75(± 0.96)	2.69(± 0.63)	2.33(± 0.90)	2.30(± 0.73)	2.37(± 0.89)	2.45(± 0.69)	2.14(± 1.07)	2.00(± 0.89)	.172
	Q53	1.86(± 0.90)	2.75(± 0.50)	2.69(± 0.86)	2.80(± 0.78)	2.73(± 0.57)	2.63(± 0.68)	2.64(± 0.67)	2.71(± 0.49)	2.17(± 0.75)	.013*
Q54	1.29(± 0.76)	1.00(± 0.82)	0.77(± 1.17)	2.07(± 1.22)	2.12(± 1.02)	1.89(± 1.33)	1.91(± 1.38)	2.00(± 1.16)	2.17(± 0.98)	.036	
Q55	1.86(± 0.90)	2.75(± 0.50)	2.92(± 0.28)	2.60(± 0.91)	2.76(± 0.50)	2.74(± 0.45)	2.64(± 0.67)	2.71(± 0.49)	2.50(± 0.84)	.047*	

*Statistical significance at $p < 0.05$

Table 5: Regression Analysis between the Modified DES Domains and the Independent Variables

Modified DES Domain	Independent Variables	B	95% CI		Adjusted R Square	p- value
			U CI	L CI		
Academic Performance Stress	Gender	-.191	.606	-.988	-.175	.542
	Professional Year	.062	.229	-.106		.364
Clinic/Patient Related Stress	Gender	.232	.568	-.103	.156	.135
	Professional Year	-.032	.038	-.103		.289
Faculty/Institution Related Stress	Gender	.141	.629	-.347	-.111	.468
	Professional Year	.016	.119	-.087		.688
Personal Issues Related Stress	Gender	.563	2.654	-1.528	-.263	.454
	Professional Year	-.022	.412	-.456		.881
Accommodation/Surrounding Environment Related Stress	Gender	.508	.775	.241	.848	.004*
	Professional Year	-.130	-.074	-.186		.002*
Professional/ Career Related Stress	Gender	.320	1.245	-.605	.188	.352
	Professional Year	.025	.216	-.167		.711
Armed – Conflict Related Stress	Gender	.031	.409	-.348	.402	.861
	Professional Year	.101	.177	.026		.014*

Multiple linear regression analysis

Multiple linear regression analyses revealed that “Accommodation/Surrounding Environment related stress” and “Armed – Conflict related stress” domains explained substantial fractions of variability: $R^2 = 0.848$ and 0.402 , respectively. Gender was reported as significant independent determinant for clinic/ patient related stress domain while as the professional year was stated to be the significant independent determinant for armed conflict related stress and accommodation/surrounding environment related stress domain (Table V).

Discussion

The findings of this study demonstrated that Armed – conflict related stress accounted for most of the stress among dental students in Kashmir. This is consistent with the findings of other studies [18, 19]. The armed – conflict had noticeable impact on these students adding substantial level of stress in their day to day life.

The professional/ career related stress” along with “clinic/ patient related stress” ranked second. Among the professional year’s third year students were the most stressed and first year students were the least stressed. This can be attributed to the effect of transition from preclinical to clinical level. These finding suggests modifications in the dental curricula where quality shall be the priority rather than the quantity. Insecurity regarding future professional career was also high among the students. The reason may be attributed to less job opportunities in India. The results of this study are in the line with existing studies, indicating that dental students are exposed to a heavy workload which act as sources of stress that affect the psychological and physical health of the students [21, 27].

Married students perceived more stress than single students in respect to “Personal Issues related Stress domain” This can be attributed to additional responsibilities (non-academic) that increase the psychological pressure and affecting the overall amount of stress. Similar results were found in other studies [18, 24, 26, 28].

In our study, females generally perceived more stress than males. This is in agreement with the findings of other studies [17, 18, 25, 26]. In contrast, studies conducted by Kumar *et al.* and Sekhon *et al.* reported that males expressed higher levels of stress [24, 29]. This gender difference can be attributed to the fact that female students report significantly higher distress has been explained by Sanders and Lushington that in addition to differing patterns of psychological morbidity, males are simply less expressive of their concern [30].

An important limitation of the present study is its cross sectional design. Such a design does not examine longitudinal fluctuations in perceived stressors over time. Another limitation is the information bias. Since the information was collected on self-administered questionnaire, study participants may have influenced some information. Future studies with a longitudinal design should be performed to report more remarkable findings.

Conclusion:

An understanding of stress levels is of paramount importance to provide professional bodies with relevant information on students’ well-being. The findings of this study suggest that armed conflict, professional/career and clinic/patient domains are the primary sources of stress among dental students in Kashmir. The female students and the married perceived more stress than males and the single study subjects. Students should be taught positive coping strategies and various stress managing techniques to improve the ability to cope with the demanding professional course. Teaching curriculum and teaching environment needs to be modified in order to alleviate perceived stresses.

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