

PERCEIVED STRESS OF BHUTANESE DENTIST; A SURVEY STUDY

Karma ZANGMO¹, Piboon RUNGTANAKIAT¹ and Mansuang ARKSORNNUKIT¹
1 Faculty of Dentistry, Chulalongkorn University, Thailand

ARTICLE HISTORY

Received: 3 February 2025

Revised: 24 February 2025

Published: 4 March 2025

ABSTRACT

The dental profession is commonly considered one of the most stressful fields. Dentists experience considerable stress from patient care and from ergonomic difficulties, ultimately lead to various health problems. Bhutan is recognized globally for placing greater importance to Gross National Happiness. The objective of study was to assess stress level among Bhutanese dentists and its associations. **Methods:** Self-administered questionnaires containing 2 sections, sociodemographic data and Perceived Stress Scale (PSS) were distributed online and 71 out of 85 dentists (50.7% female and 49.3% male) responded. Fisher's exact test was used to assess the association between demographic data and PSS score. **Results:** Most responders were 77.5% general dentists, predominantly Generation Y (1981-1997) group which reported moderate levels of PSS score. An association between PSS score and working experience was found at $p = 0.004$. **Conclusion:** A substantial percentage (88.7%) of Bhutanese dentists are under moderate stress and only work experience factor showed a significant association with perceived stress levels.

Keywords: Perceived Stress Scale, Dentists, Bhutan

CITATION INFORMATION: Zangmo, K., Rungtanakiat, P., & Arksornnukit, M. (2025). Perceived Stress of Bhutanese Dentist; A Survey Study. *Procedia of Multidisciplinary Research*, 3(3), 14.

INTRODUCTION

Stress can affect any organism, and each one reacts to it differently. We all everyday experience stress. Stress does not always have detrimental consequences on our bodies and minds, on rare occasions, stress even improves performance in certain individuals. The way that different people react to stress varies based on the situation and even the person. “Stressor” is the actual or perceived threat to an organism and when there is response to the stressor called “stress response” (Schneiderman, Ironson, & Siegel, 2005). Hans Selye illustrated the concept of the General Adaptation Syndrome (GAS) as the body's response to stress. This process unfolds in a sequence of stages, starting with the initial alarm reaction (often referred to as fight or flight), followed by a phase of resistance where the body aims to recuperate, and ultimately leading to a stage of exhaustion (Selye, 1950).

Stress has evolved from being an issue that only affects individuals on a personal level to becoming a problem that extends to the workplace and social sphere. It can impact individuals from all demographics and age groups, regardless of their gender, nationality, educational background, or occupation. Work-related stress is believed to affect up to one-third of the workforce (Pozos Radillo et al., 2008). Stress-related environmental factors have been demonstrated to exert influence on the proliferation of countless diseases (Pozos Radillo et al., 2008). World Health Organization has declared stress in workplace as the worldwide health epidemic of the 21st century. Emotions and stress can manifest in a multitude of ways. Stress can cause physical discomfort, hamper focus, and even make it difficult to fall asleep. In addition to impairing mental health, stress can make it difficult to carry out daily duties. Work-related stress is a well-documented concern that has been extensively studied across various occupations. Compared to other healthcare professionals, dentists view their line of work as exceedingly demanding (Moore & Brødsgaard, 2001). The well-being of healthcare personnel and the quality of patient treatment are both negatively impacted by stress, which have emerged as major challenges in the healthcare sector. Dental professionals face numerous stressors. A dentist is a practitioner who is greatly influenced by stress. Dentists are subjected to a variety of stressors in their regular interactions with patients as well as during the performance of various dental endeavours and treatments. Factors that affect the psychological status of the dentist can include stress induced by clinical work, tension caused by work with nervous patients, emotional tiredness, and sadness (Pejčić et al., 2021). In one study conducted in the United Kingdom, 54.9% of surveyed dentists reported high levels of stress in their occupations, while 43.8% reported being unable to cope with the degree of stress in their work, general dentists scored the highest among all groups surveyed (Collin et al., 2019). Understanding what type of stress that are both beneficial and harmful is essential. Thus, it has been established that excessive stress is a serious issue and tends to get worse. The degree of stress can be categorized as light, moderate, or severe depending on each classification. Cooper's theory of stress states that stress is a never-ending cycle in which stressors cause stress reactions, which can then positively affect the stressors. As a result, the secret to managing stress to identify the underlying cause, which permits a correct comprehension of the issues and the implementation of workable remedies (Cooper & Baglioni Jr, 1988).

There are lots of method to measure stress for example, Perceived Stress Scale (PSS), Holmes and Rahe Social Readjustment Rating Scale (SRRS), Depression, Anxiety, and Stress Scale (DASS), Skin conductance response (SCR) scales, Heart rate variability (HRV) analysis, Electroencephalography (EEG), Hormone testing. PSS was used as it is one of the widely used standard too for measuring stress. It is a self-reported questionnaire. It was originally constructed with 14 items, then 4 items and 10 items. It asked the participant about how they felt and thought about their feeling in last one month (Harris et al., 2023). It was rated in 5 Likert scale in PSS 14 items, PSS scoring ranges from 0 to 56. The PSS scoring is divided into three stress levels: low, moderate and high. The higher score reflects more stress.

Bhutan is a small country located in between two enormous countries China and India. With the population of around 720,000 and 38,394 square km of land area, 75 dentists working in public hospitals, 10 dentists working under Royal Bhutan Army. They are distributed among 20 districts of Bhutan. Health services in Bhutan are available in three -tier structure. (Thinley et al., 2017).

Bhutan is known to world as Gross National Happiness country, where the core concept is, people's happiness is more important than gross national product. Despite Bhutan's emphasis on happiness, in 2023, the country was ranked 97th out of 150 nations, a slight drop from 2019 where the Bhutan was ranked 95th. These rankings suggested that Bhutanese people might be experiencing challenges or dissatisfaction in their life. Given the number of dentists in the nation, the ratio of dentists to population is 1:8200 approximately. This ratio is higher than 1:7200 as per the WHO to provide optimum dental health care to the population. This reflected that dentists in Bhutan might be overworked. Stress is unavoidable when there is an overwhelming workload, therefore, the objective of this study was to survey the stress level among Bhutanese dentists and its associations.

METHOD

This research was approved by the ethic committee of the faculty of Dentistry, Chulalongkorn University (HREC-DCU 2024-034) and Research Ethics Board of Health, Bhutan (2024.30. NW)

The study was cross sectional descriptive study. The criteria for inclusion were dentists practising in Bhutan. Incomplete forms and participants on antidepressants were excluded. For sampling determination, Yamane's method was used. Information was obtained through an online self-reported survey. Online survey questionnaire was sent to all the dentists practising in Bhutan. The data collection was carried out during September to December 2024. Total number of registered dentists in Bhutan at the time of conducting this study is 85. Therefore, 70 was the minimum number of samples according to Yamane. In this study, 71 dentists responded to the questionnaire and was included in the analysis. Tools used were sociodemographic information, perceived stress scale (PSS)14 items (Selye, 1950).

For PSS score, invert the values for specific questions and then add your total scores for each item. Individual PSS ratings range from 0 to 56, with higher numbers indicating more perceived stress. Scores from 0 to 18 are considered mild stress, 19-37 moderate stress, and 38-56 perceived stress.

The sociodemographic was reported in terms of frequency and percentage. Fisher's exact test was used to determine the association of PSS score and each sociodemographic variable at $p < 0.05$. The data analysis was performed using IBM SPSS Statistics version 29.0.2.0 (20).

RESULTS

Table 1 showed sociodemographic information of the sample participated.

Variable		Number	Percentage (%)
Designation	General dentist	55	77.5
	Specialist	16	22.5
Age	Gen Y (1981-1997)	67	94.4
	Gen X (1965-1980)	4	5.6
Gender	Female	36	50.7
	Male	35	49.3
Marital status	Single	21	29.6
	Married	50	70.4

Variable		Number	Percentage (%)
Work experience	1-10 yrs	63	88.7
	11+ yrs	8	11.3
Population	50-5000	11	15.5
	5001-15000	20	28.2
	15000+	40	56.3
Salary	USD 300-600	8	11.3
	USD 600+	63	88.7
Does your family depend on your income?	Yes	42	59.2
	No	29	40.8
How many patients do you see in a day?	1-15 patients	26	36.7
	16-25 patients	24	33.8
	26+	21	29.5
How often do you think about your career upgrade?	Never	2	2.8
	Almost never	26	36.6
	Sometimes	13	18.3
	Fairly often	30	42.3
	Very often	0	0

According to table 1, most respondents are general dentists (77.5%), predominantly from Generation Y (94.4%), with a near-equal gender distribution (50.7% female, 49.3% male), 63 (88.7%) of dentists are having between 1-10 years of working experience. Most dentists work in areas with populations exceeding 15,000 (56.3%) and 63 (88.7%) dentists gets salary above USD 600 monthly, with 59.2% having families that depend on their income. They primarily treat 1-15 patients daily (36.7%) and (29.5%) dentists treat patients more than 25 per day. When it comes to career upgrade, 30 (42.3%) considered career advancement frequently, 13 (18.3%) rarely, 26 (36.6%) almost never and 2 (2.8%) never considered the upgrade.

Table 2 demonstrated the PSS-14 score of the participants.

Score	Perceive stress level	Number	Percentages (%)
0-18	Low	6	8.5
19-37	Moderate	63	88.7
38-56	High	2	2.8

According to table 2, 88.7% of participants reported experiencing moderate stress levels. Two point eight % reported high stress levels, while 8.5% reported low stress levels.

Table 3 showed association between PSS-14 score and each sociodemographic factor.

Variables	Fisher's exact test (exact sig)
Designation	0.341
Age	0.389
Gender	1.000
Marital status	1.000
Work experience	0.004*
Population	0.504
Salary	0.636
Do your family live with you?	0.330
Do your family depend on your income?	0.596
How many patients do you see in a day?	0.596
How often do you think of career upgrade?	0.231

*Significant levels at P-value < 0.05

According to table 3, there was no significant association with most of the sociodemographic factors to PSS score except for working experiences which showed significant association $p = 0.004$.

Correlation between perceived stress and work experience

A spearman's correlation was conducted to assess the relationship between perceived stress and work experience. The result showed a weak negative correlation, $r_s = -0.218$, $p = 0.034$. Negative correlation suggested that as work experience increases, perceived stress tends to decrease. The p-value (0.034) indicated that the correlation is statistically significant. However weak correlation suggested that other factors also contribute to perceived stress.

Limitation

Due to small sample size, many statistical tests couldn't be conducted, as they might produce unreliable or misleading results and since all respondent dentists are working in public clinics and do not practise in private clinics, comparisons was limited.

DISCUSSION

The PSS is a widely used psychological instrument designed to measure the perception of stress by Cohen, Kamarck and Mermelstein in 1983. It is still widely used to assess individual stress levels. It is a frequently used psychological instrument for assessing stress perception (Lee, 2012). It is the self-reported scale available in many different languages and used in many countries. Therefore, it is chosen and used in this study. The PSS is scored on a 5 -point Likert scale ranging from 0 ("never") to 4 ("very often"). Reliability of the test has been performed many times and validated. PSS was initially developed as a 14-items scale that assessed the perception of stressful experiences by asking the participates to rate the frequency of his/her feelings and thoughts related to events and situations that occurred over the previous month. There are also two short forms of PSS; 4 and 10. The scale includes of questions that asks about feelings and thoughts over the last month, with respondents expressing how frequently they felt or thought a given manner on a range of 0 (never) to 4 (very often).

In this study, most dentists (88.7%) reported moderate stress levels, unlike, study done in Pakistan with 44.6% (Siddiqui et al., 2022), Qatar 70% (Abbas et al., 2024) and United Kingdom 54.9% (Collin et al., 2019) of dentists reported high level of stress, whereas in this study, 2.8% of Bhutanese dentists experienced high stress. No significant associations were found between sociodemographic factors and PSS score ($p > 0.05$) except working experience demonstrated significant of association with PSS score ($p = 0.004$). This suggested that stress was a common concern across various sociodemographic factors within the dental profession. However, Yarkaç et al., 2021 showed significant difference between genders; female being more stressful. This was not in line with this study that association between stress and gender could not be found. This might attribute to the lack of gender bias in taking household responsibilities or being a bread earner in Bhutanese family as belief as a norm in Bhutanese culture.

Interestingly, work experience showed a significant association with PSS score ($p = 0.004$) in this present study. Dentists with fewer years of work experience reported higher stress levels, potentially due to the pressures of establishing their early careers, building patient trust while managing complex cases and lack of confidence during procedure. It was also hypothesized that this younger generation might have influenced from work-life balance conceptual. One must balance work, taking care of family, aging parents and health. These made them prone to be under stress (Scott et al., 2013). This finding reflected the need of support in early career dentists, such as mentorship programs and stress management training. As shown in this study,

it could not draw exact age since specific age was not included in the questionnaire, therefore exact percentages of participants fall in this group could not be drawn.

A considerable proportion of dentists (29.5%) treated more than 25 patients daily, indicating high workloads. However, no significant association was found between the number of patients treated per day and PSS score. This could possibly be derived from the culture and happiness-oriented lifestyle of Bhutanese. In addition, all practising dentists in Bhutan have only one job as government officials working only 6 hours per day from 9 AM to 3 PM. They are not allowed to do any private practice. This might also suggest that factors beyond patient volume, such as workplace dynamics, administrative responsibilities, or personal coping abilities, might contribute to stress.

Future studies can incorporate both quantitative and qualitative methods to enhance the accuracy of the results and allow for more comprehensive statistical analysis.

CONCLUSION

Within the limitations of this study, it was found that 88.7 % of Bhutanese dentists reported having moderate PSS score. Among sociodemographic factors, only work experience showed significant association with PSS score with $p = 0.004$.

REFERENCES

- Collin, V., Toon, M., O'Selmo, E., Reynolds, L., & Whitehead, P. (2019). A survey of stress, burnout and well-being in UK dentists. *British Dental Journal*, 226(1), 40-49.
- Cooper, C. L., & Baglioni Jr, A. (1988). A structural model approach toward the development of a theory of the link between stress and mental health. *British journal of medical psychology*, 61(1), 87-102.
- Harris, K. M., Gaffey, A. E., Schwartz, J. E., Krantz, D. S., & Burg, M. M. (2023). The perceived stress scale as a measure of stress: Decomposing score variance in longitudinal behavioral medicine studies. *Annals of Behavioral Medicine*, 57(10), 846-854.
- Lee, E. H. (2012). Review of the psychometric evidence of the perceived stress scale. *Asian Nurs Res (Korean Soc Nurs Sci)*, 6(4), 121-127.
- Moore, R., & Brødsgaard, I. (2001). Dentists' perceived stress and its relation to perceptions about anxious patients. *Community dentistry and oral epidemiology*, 29(1), 73-80.
- Pejčić, N., Petrović, V., Ilić-Dimitrijević, I., Jakovljević, A., Nikodijević-Latinović, A., Petrović, R., & Perunović, N. (2021). Occupational stress among dental professionals. *Balkan Journal of Dental Medicine*, 25(2), 67-72.
- Pozos Radillo, B. E., Tórrez López, T. M., Aguilera Velasco, M. d. L. Á., Acosta Fernández, M., & González Perez, G. J. (2008). Stress-associated factors in Mexican dentists. *Brazilian oral research*, 22, 223-228.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: psychological, behavioral, and biological determinants. *Annu Rev Clin Psychol*, 1, 607-628.
- Scott, S. B., Whitehead, B. R., Bergeman, C. S., & Pitzer, L. (2013). Combinations of stressors in midlife: examining role and domain stressors using regression trees and random forests. *J Gerontol B Psychol Sci Soc Sci*, 68(3), 464-475.
- Selye, H. (1950). Stress and the general adaptation syndrome. *Br Med J*, 1(4667), 1383-1392.
- Thinley, S., Tshering, P., Wangmo, K., Wangchuk, N., Dorji, T., Tobgay, T., & Sharma, J. (2017). The Kingdom of Bhutan health system review. *Health systems in transition*, 7(2).
- Yarkaç, F. U., Atay, Ü. T., Dinçer, N. N., & Öncü, E. (2021). Evaluation of dentists' stress and anxiety levels in the COVID-19 pandemic. *International Dental Research*, 11(Suppl. 1), 259-265.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.



Copyright: © 2025 by the authors. This is a fully open-access article distributed under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0).