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Association between long working hours and unmet dental needs among bank employees of Jaipur city in India

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Abstract:
Long working hours may reduce employees' ability to obtain needed dental care. Therefore, it is of interest to examine the weekly working time, occupational wellness and unmet dental needs among 258 public-sector bank employees in Jaipur. Occupational wellness was assessed using the Wellness Evaluation of Lifestyle (WEL) scale and unmet dental need was defined as a perceived need for examination or treatment that was not met within the previous year; >52 hours/week was used as an operational research threshold for comparability with prior literature, not as an Indian statutory limit. Unmet dental needs were reported by 53 men (28.2%) and 16 women (22.8%) and lower occupational wellness was associated with age, designation and unmet dental needs. Several regression estimates in the source manuscript are internally inconsistent, including a prevalence ratio of 1.36 reported with a 95% CI of 1.03-1.32; these estimates require confirmation from the original statistical output before submission. Thus, data shows that long working hours and reduced occupational wellness may contribute to unmet dental care needs in this workforce.

Keywords: Unmet dental needs, long working hours, bank employees, occupational wellness, access to dental care

Background:
Wellness is a multidimensional concept that includes physical, emotional, social, occupational and other aspects of functioning **[1-3].** Occupational wellness reflects the extent to which work provides purpose while allowing individuals to maintain health and sustainable daily functioning. Long working hours, high workload, role pressure and work-life imbalance can increase occupational stress and adversely affect quality of life and health behaviours **[4].** Indian banking employees have been reported to experience substantial occupational stress and burnout, particularly in demanding public-facing roles **[5, 6].** Therefore, it is of interest to evaluate the relationship among long working hours, occupational wellness and unmet dental needs among public-sector bank employees in Jaipur.

Methodology:
Study population, sample size and data collection:
In the present study, a total of 258 samples were recruited from 12 public sector banks of Jaipur city. Permission was taken from Reserve bank of India regional head office Jaipur. The duration of the study was between February 2023 to August 2024 (18 months). Data was collected using multi-stage clustered probability sampling design, representing the entire population of bank workers working in public sector. The survey consisted of sequential health interviews assessing wellness scores and lifestyle risk factors. The interview covered all the variables defining occupational dimension of wellness among the study population. The study population for the investigation consisted of scale 1 to scale 4 officers of the scheduled public sector /nationalized banks of the Jaipur city. Scale 1(Assistant manager), Scale2 (Manager), Scale 3 (senior manager) and Scale 4 (Chief Manager). These were chosen over others because they come under frontline bank workers and are under more organizational source of stress (task demands, role demands, organizational structure, organizational leadership, interpersonal demand and job security) which all has an effect on work life balance affecting holistic wellness. The data was collected via face-to- face administration of the questionnaire (WEL scale) **[7, 8]**. Assumption of sample size was assessed by the equation suggested by Tabachn ick and Fidell (2013). $N > 50 + 8m$ (m = the number of independent variables, N = Sample size)

Inclusion and exclusion criteria:
Bank employees of scale 1-4 who were volunteer to participate were included. Whereas, those who were not present on their work during the period of data collection were excluded.

Measurement of variables:
Dependent variable:
The dependent variable in this study was "unmet dental needs," defined as the absence of dental care, despite the recognition of its necessity, within the past year **[14]**. The primary reason for unmet dental needs was classified into economic reasons, long distance from workplace, long term comorbidity issues, stressful desk work and long working hours. Therefore responses generated were pinned and measured.

Independent variable:
The independent variable was weekly working time. Long working hours were operationally defined as >52 hours/week to permit comparison with prior studies of unmet dental needs and long working hours **[14, 18];** this threshold was used for research classification and was not treated as an Indian statutory working-time limit.

Confounding variables:
The study identified confounding variables as socio-demographic variables and occupational factors. The socio-demographic variables comprised gender, age, marital status, education level and designation.

Statistical analysis*:*
IBM SPSS Statistics was used for data analysis and predictive modelling. Because unmet dental needs were common in the sample, prevalence ratios (PRs) with 95% confidence intervals were preferred for association estimates. Multivariable modelling was used to evaluate the relationship of unmet dental needs with working hours and relevant covariates; all reported estimates should be checked against the original SPSS output before submission.

Statement of the problem:
Banking sector is one of the vital pillars and plays a key role in development of the nation's economy. It also provides the government a perfect platform to roll out the social benefit schemes for the citizens. During the last two decades, the banking sector in India is rapidly transformed because of liberalization, globalization and changes in government policies, technological innovations and profound market rivalry. From traditional approach banks catapulted to a customer centric, technology driven, financial supermarket catering to the varied needs of its customers. Bank employees play a pivotal role in providing good quality services to the customers of the bank. Consequently, the bank employees are experiencing intense stress in these challenging situations **[12, 13]**. Except the lifestyle diseases that many research studies suggests, bank employees are experiencing problems like job burnout, stress and job dissatisfaction (Bajpai and Srivastava, 2004; Chen and Lien, 2008). The National Institute for Occupational Safety and Health (NIOSH) ranked occupations for stress levels, where 130 occupations were found more stressful. Common issues among employees of all 130 occupations were, feeling of not being able to control the work and feeling of getting stuck into a work where one is treated like a quasi-machine instead of a human. Manager, Administrator and Supervisor were among the top 12 stressful positions and banking sector was 28th on the list (Michailidis and Georgiou, 2005) **[13].**

Results:
The 258 participants included 188 men (72.8%) and 70 women (27.1%). Marital status was reported as married in 172 participants (66.7%), single in 32 (12.4%), divorced in 26 (10.1%) and widowed in 28 (10.8%). Mean age was 37.80±8.56 years **(Table 1).** Unmet dental needs were reported by 53 men (28.2%) and 16 women (22.8%). Age, designation and unmet dental needs were negatively associated with the total occupational-wellness score, while the manuscript reports stronger associations among employees working longer hours. However, the reported PR of 1.36 with a 95% CI of 1.03-1.32 is mathematically inconsistent because the point estimate lies outside its confidence interval; the multivariable PRs and confidence intervals must therefore be verified from the original statistical output before inferential claims are finalized. Among the 69 participants reporting unmet dental needs, 54 (78.3%) attributed the problem to insufficient time related to long working hours. The manuscript also reports sex-stratified prevalence-ratio estimates for lack-of-time-related unmet dental needs; because different PR values are reported in different sections, these estimates should be reconciled with the original SPSS output before submission. Professional designations included 58 Scale 1 officers (22.4%), 110 Scale 2 officers (42.6%), 45 Scale 3 officers (17.4%) and 45 Scale 4 officers (17.4%). Educational attainment was postgraduate in 146 participants (56.5%) and graduate in 112 (43.4%); mean work experience was 13.45±7.38 years **(Tables 2-4). Table 1** describes 258 employees, including 188 men (72.8%) and 70 women (27.1%). Most were married (172, 66.7%), and mean age was 37.80±8.56 years. The reported categories of marital status sum to all 258 respondents. **Table 2** describes staff grades: 58 scale-1 (22.5%), 110 scale-2 (42.6%), 45 scale-3 (17.4%) and 45 scale-4 (17.4%) officers. The table gives 139 men and 119 women, which conflicts with **Table 1** (188 men and 70 women); the sex-by-grade breakdown must be reconciled with the questionnaire data before these distributions can be considered definitive. **Table 3** distributes 258 survey responses among 12 public-sector banks. The State Bank of India supplied 38 questionnaires (14.7%), Bank of Baroda 35 (13.6%), Bank of Maharashtra 27 (10.5%) and several other banks between 11 and 24. The institution-level totals sum to 258, but this distribution reflects sampling contribution rather than the prevalence of unmet dental needs within each bank. **Table 4** shows scale-2 managers formed the largest designation category (110/258, 42.6%); 146 respondents (56.6%) held postgraduate qualifications and 112 (43.4%) were graduates. Mean work experience was 13.45±7.38 years. The displayed education and grade categories each total 258.

Table 1: Categorical demographic variables - participant personal characteristics

Data Category	Total (n)	Percentage
Gender (N = 258)		
Male	188	72.8%
Female	70	27.1%
Marital status		
Married	172	66.7%
Single	32	12.4%
Divorced	26	10.1%
Widowed	28	10.8%
Age (N =258)	37.80 years (SD = 8.56)	

Table 2: Total percentage of bank officials participating in research

Designation	Male	Female	Total	Ratio
Scale 1 officer	33	25	58	22.4 %
Scale 2 officer	54	56	110	42.6%
Scale 3 officer	23	22	45	17.4%
Scale 4 officer	29	16	45	17.4%
Total	139	119	258	99.8%

Table 3: Bank wise amount of survey received

Name of the bank (Public sector)	Frequency	Ratio
State bank of India	38	14.7%
Bank of Baroda	35	13.6%
Bank of India	24	9.3%
Bank of Maharashtra	27	10.5%
Canara Bank	24	9.3%
Central bank of India	12	4.6%
Indian bank	15	5.8%
Indian overseas bank	12	4.6%
Punjab and Sindh bank	14	5.4%
Punjab national bank	22	8.5%
UCO bank	24	9.3%
Union bank of India	11	4.2%

Table 4: Categorical demographic variables - participant characteristics

Data Category	Total (n)	Percentage
Designation (N=258)		
Assistant Manager (scale1 officer)	58	22.4%
Manager (scale 2 officer)	110	42.6%
Senior Manager (scale 3 officer)	45	17.4%
Chief Manager (scale 4 officer)	45	17.4%
Educational Qualification (N = 258)		
Post Graduate	146	56.5%
Graduate	112	43.4%
Work Experience (N = 258)	13.45 (SD=7.38)	

Discussion:

Evidence on work schedules, occupational health, and dental-care access is additionally discussed in references **[9–13];** several sources were substituted for references unrelated to the study question. This study examined the relationship among long working hours, occupational wellness and unmet dental needs in public-sector bank employees. Unmet dental needs were reported by 28.2% of men and 22.8% of women and 78.3% of participants with unmet dental needs attributed the problem to insufficient time. Previous occupational-health studies have similarly shown that long working schedules can reduce access to timely healthcare and dental care. In banking settings, workload, role pressure, target-driven work and limited schedule flexibility may compound this problem, while childcare and household responsibilities may create additional barriers for some employees **[14-18].** The present findings should nevertheless be interpreted cautiously because the study used self-reported data, did not include objective oral-health indicators and contains internally inconsistent regression estimates that require verification from the original statistical output. Once those estimates are confirmed, multivariable analysis should report adjusted PRs with 95% confidence intervals and clearly specify the reference category for weekly working hours. These findings also support broader occupational-health recommendations that emphasize healthier work organization and enabling environments for workers **[19, 20]**. A Jaipur-based survey of bank employees also examined oral health and occupational stress; differences in workplace sampling and dental-care outcome definitions should be considered before directly comparing prevalences **[20]**.

Conclusion:

Long working hours and lower occupational wellness were associated with a greater burden of unmet dental needs among public-sector bank employees in Jaipur, with lack of time commonly reported as a barrier to seeking care. The descriptive findings support workplace strategies that improve schedule flexibility, preventive oral-health access and occupational-wellness support. Because several multivariable PRs and confidence intervals in the source manuscript are inconsistent, the final strength and precision of these associations should be stated only after verification against the original statistical output.

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Conflict of Interest: There is no conflict of interest.

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