Title: Development and validation of tool for screening occupational mental health and workplace factors influencing it

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Abstract

Introduction:

Occupational mental health is one of the key entity for ideal work place. Earlier studies have identified certain workplace factors to influence the mental health of the worker. "Workload", "Reward", "Community", "Control", "Values" and "Fairness" are the key areas identified in occupational psychology that determine the mental health of the worker. An imbalance in these factors may lead to negative occupational mental health, i.e. burnout. The burnout, a psychological syndrome is combination of emotional exhaustion, depletion of compassion and sense of reduced accomplishment. To note, the concept of occupational mental health in nation with second largest workforce is nascent. Further, the utility of existing western tools in Indian context is limited by multiple factors such as less comprehensibility, culturally inappropriate, patented and other factors. Hence, a tool was developed to screen the occupational mental health and workplace areas.

Methods and results:

Conventional steps involved in psychological tool development, viz. construct identification, drafting of pertinent questions, content validation, field testing of questions and others were adopted. After series of steps, a tool for screening the occupational mental health consisting of 21 questions and screening the key constructs influencing the mental health at workplace (workplace assessment) consisting of 25 questions were developed. Each of these questions sought responses using a 3-point scale i.e. "Never", "Sometimes" and "Always". As intended, the questions were relatively simple, shorter, comprehensible and compliant (no rejections) as observed by the feedback obtained during the pilot (feasibility) study involving 58 consenting volunteers. The tool was explored on larger sample involving workforce from various occupational background in addition to screening of the general mental health using general health questionnaire 5 (GHQ 5). The screening tool exhibited adequate test - retest reliability, internal consistency / reliability (cronbach's $\alpha > 0.73$) and correlation (correlation coefficient > 0.6) with the general mental health in larger evaluation of 153 consenting workers.

Conclusion:

Present study attempted to develop tool for screening adverse occupational mental health (burnout) and workplace factors that are known to be detrimental for mental health. Considering the magnitude of workforce and relatively naïve the concept of occupational mental health in the country, a tool (such as the one reported in the study) for screening the mentioned constructs are need of the hour. Hence, the proposed simple and easy to administer tool, would aid in recognizing the burnout and aid in early diagnosis and management of those requiring intervention.

Key words: Occupational mental health, burnout, workplace key areas.

1 Introduction

Working adults spend majority of their waking hours at the workplace. Therefore, the workplace environment has a substantial role in determining the mental health (as well physical health) of workers. An ideal workplace environment should be free from physical, chemical and psychological hazards promoting both physical and mental health (wellbeing) (1). Compromise in occupational mental health and psychological hazards in the workplace environment has led to economic loss by direct costs (e.g., absence, retirement) as well indirect costs for the workers, such as compromise in the quality of life (2).

Burnout, is a psychological syndrome involving exhaustion of emotional resources, depleted compassion / empathy to fellow individuals (depersonalization / cynicism) and a perception of incompetence and lack of achievement / adequate productivity at work (personal accomplishment) as a consequence of extended exposure to psychological hazards (occupational stress) at work environment (3). The concept of burnout initially reported among human service related occupations (health care workers, banks, teachers) is lately being recognized among other occupations as well (3).

Occupational mental health is a balance between the impact of workplace stressors (negative factors) on mental health (psychosocial load) and availability of resources (positive factors) to successfully overcome harsh workplace factors (2). Leiter & Maslach (1999) investigations on specific workplace factors and resources, observed "*Workload*", "*community*", "*reward*", "*control*", "*fairness*" and "*values*" as the 6 key areas of the workplace to predict the occupational mental health (i.e. development of burnout) (4).

The "*workload*" dimension is the quantum of work (physical and mental) the individual is entitled to complete (5, 6). The "*reward*" dimension refers to the power of reinforcement to shape the behavior of the worker, and points to the extent to which rewards (monetary, social and intrinsic) are consistent with the individual's expectations (7, 8). The overall quality of social interaction and inter-individual coordination and cooperation at work is assessed by the "*community*" dimension (9). The "*control*" dimension encompasses the perceived capacity of workers to influence decisions relating to their work, to exercise personal autonomy, and to gain access to resources (10). The "*fairness*" dimension captures the extent to which decisions and resource allocation at work are perceived as fair and equitable (11). Finally, the ideals and motivation that attract people to their jobs are covered by the "*values*" dimension (12). Notably, these factors are variably prevalent in various occupational profiles and are reported to variably influence the workers' mental health. wherein, workload, reward and community are the commonly observed factors, while control, fairness and values are particularly reported among occupational groups at higher levels of occupational / wage hierarchy (e.g. manager, team leaders, etc.) (13, 14).

The research pertaining to occupational mental health and psychological hazards of workplace are quite nascent in India. Considering the magnitude of workforce (globally second largest) in India, there are scarce reports on occupational mental health among Indian workforce. Current Indian literature reporting occupational mental health is restricted to human service related occupations (health care workers, bank, police and teachers) and occasionally white collared professions (software professionals) leaving the larger labor workforce unevaluated. Further, these Indian studies are limited by using western tools

(culturally inappropriate and incomprehensible)/ invalidated tools (15-20). Hence, current study recognizing the need for tool to evaluate occupational mental health and workplace factors, aimed at developing tool for screening the occupational mental health, as well the key areas of the workplace known to influence the workers' mental health, and evaluate its feasibility of application and reliability.

The utility of existing western tools in Indian context are limited by, usage of terms that are less comprehensible / less used among Indian population (e.g. "How often are you emotionally exhausted", "Is your work emotionally exhausting" from Copenhagen burnout tool, "I feel exhilarated after working...", "I've become more callous toward people..." from Maslach Burnout Inventory (MBI)), sensitive questions that may potentially bias the recipient's response (e.g. "I don't really care what happens...", "I feel I treat ... if they were impersonal objects" in Maslach Burnout Inventory (MBI) and "It happens more and more often that I talk about my work in a negative way" from Oldenburg tool) and patented (e.g. MBI requires payment for their usage). Further, these tools have been scarcely administered / reported among blue collared workers / nature of work not involving direct human services. Lastly, the primary literature on these tools involves self-administration, which would be impractical among blue collared workers, particularly for reasons of no / minimal formal education. Hence, there is need for a tool for screening the above mentioned constructs, with relatively simpler language, shorter questions (relatively less cognitively taxing) of relevance to Indian workforce / workplace and requiring less effort for administering the tool/ training the interviewer.

Methods and results:

Occupational mental health (burnout) screening tool development:

Construct identification and selection of questions:

Questions pertaining to the symptoms (dimensions) of occupational mental health from previous studies were extracted, modified and customized to the needs of indigenous workforce by the group of experts (committee) in clinical psychiatry, psychology, sociology, humanity sciences and occupational health (including the authors RB, SB, AK). The committee identified the constructs of burnout, viz. emotional exhaustion, depersonalization and impaired accomplishment from tools used in previous studies MBI, MBI-General Survey (21), CBI (Copenhagen Burnout Inventory) (22), Oldenburg Burnout Questionnaire (23) and Shirom-Melamed Burnout Questionnaire (24) and developed questions pertinent to these constructs.

Question phrasing and finalizing:

The committee listed questions by both deductive and inductive methods during series of meetings. During this process, the committee ensured the questions were simple (adopting commonly used terms), avoided potentially sensitive terms, shorter questions (requiring less effort to comprehend / respond) and finalized 21 questions for evaluating "emotional exhaustion" (11 questions), "depersonalization" (5 questions) and "personal accomplishment" (5 questions) with each of the questions being responded with 7-point scale i.e. "everyday", "few times a week", "weekly", "few times a month", "monthly", "occasionally" and "never". The questions were drafted combining positively and negatively worded items, as they are regarded superior over one-sided scales from psychometric point of view, as the one

sided questions can lead to artificial factor solutions in which positively and negatively worded items are likely to cluster or may show artificial relationships with other constructs (25). The committee ensured to avoid the possibility of stereotyped response patterns and confusions due to double negation response situations while drafting the questionnaire (22).

Workplace screening tool development:

Construct identification and selection of questions:

The committee in similar steps adopted for drafting the “Burnout screening tool” drafted questions revolving the six key areas (constructs) influencing the mental health at workplace, by identifying the constructs from previous studies, and customizing to the needs of indigenous workforce. The committee referred the previous tools, job content questionnaire (26), Copenhagen psychological questionnaire (27), MBI-General Survey (21), occupational stress index (28) Occupational stress index (28), Occupational role scale (29), job stress scale (30) and other scales described in the recent systematic reviews (31, 32) to prepare the initial draft of questions.

Question phrasing and finalization:

The committee drafted the final list of questions ensuring they are simple, shorter and relatively neutral (similar to that, while developing “Burnout screening tool”) after a series of meetings by both deductive and inductive methods. The final list consisted of 26 questions for evaluating the 6 areas of the workplace, namely “workload” (5 questions), “reward” (3 questions), “community” (3 questions), “control” (6 questions), “values (4 questions) and fairness (4 questions) with each of the question being responded with 5-point scale with “0” being “never” and “5” being “always”. The committee ensured content validity, comprehensibility of the questions (in terms of simple language and relatively shorter questions).

Pilot analysis: Feasibility and utility:

The tools were initially piloted with 58 consenting participants in the vernacular language (Hindi) to evaluate the feasibility, comprehensibility and utility after obtaining necessary permission from the institute human ethics committee. All participants were employed for a minimum 1 year at the same place. All participants were briefly interviewed by the clinical experts (AK & RB), to ensure they were free from major psychological / psychiatric disturbances / alcohol use disorders. The details of the responders are provided in table 1. Briefly, the pilot sample consisted of participants employed in both formal workforce (working conditions abided by labor laws) and informal workforce (working conditions not regulated by labor laws), varying job roles, education and work experience.

Table 1: Participant (Pilot sample) characteristics

Details	Description
Formal sector : informal sector (ratio)	17:41
Female: Male (%)	10: 48
Age in years as median (range)	29.5 (21 – 56)
Education (n)	< 5 years of formal education including Illiterate (no formal education) = 14 5 – 10 years of formal education = 22 > 10 years of formal education (including graduate & post - graduate) = 22
Work experience in years, as Median (Range)	4 (1 – 35)

Job profile	
Semiskilled / skilled labor : Supervisory / managerial (ratio)	44 : 14
Formal workforce : Informal workforce	16 : 42

Few participants willing to share the feedback, confirmed the ease of comprehension and length of interview in relevance to their workplace and its effects on mental health. The participants expressed a shorter response scale (i.e. possibly 2 - 3 point) in place of the wide scales (i.e. 7-point occupational mental health scale and 5-point workplace assessment scale) would improve the ease of comprehension and response rate. All but 5 questions from “Burnout screening tool” and 6 questions from “Workplace screening tool” were rated with “1”, “2” and “3” corresponding to “never”, “sometimes” and “Always”, while the 5 questions from “Burnout screening tool” and 6 questions from “Workplace screening tool” were rated in opposite direction. Therefore, higher cumulative scores for each tool indicated poor occupational mental health and workplace constructs.

All participants were approached about 4 - 6 weeks later, however a fraction (~ 25%) of the participants consented to provide responses again. These participants continued to work in the same work environment and did not report any major incidents suggestive of influencing their mental health during this interval. The “Burnout screening tool” and “Workplace screening tool” exhibited satisfactory test - retest reliability (Pearson’s correlation coefficient of 0.67 and 0.77 respectively). The committee on reviewing the responses finalized the list of questions for occupational mental health tool and workplace assessment tool, and decided to scale these questions with 3-point scale i.e. “Never”, “Sometimes” and “Always”.

Description of the tools:

A tool for screening the occupational mental health consisting of 21 questions and screening the key constructs influencing the mental health at workplace (workplace assessment) consisting of 25 questions were developed. Each of these questions sought responses using a 3-point scale i.e. “Never”, “Sometimes” and “Always”. As intended, the questions were relatively simple, shorter, comprehensible and compliant (no rejections) as observed by the feedback obtained during the pilot (feasibility) study.

Validation:

The tool was applied on a larger sample, with additionally using a screening tool for measuring their general mental health of the participants (i.e. General Health Questionnaire – 5 (GHQ-5)). About 153 consenting workers residing in urban set-up with heterogeneous occupational background were interviewed in Hindi language. The validation phase of the study received necessary approval from institutional scientific advisory and ethics committee for complete application of “Burnout screening tool” and partial application of the “Workplace screening tool”. The basic demographic and occupational details of these participants is described in the table 2. The participants were interviewed between August - October 2020 during which the viral pandemic was prevalent across the country. An adult with GHQ-5 score of ≥ 2 is identified as the need for further evaluation by the mental health expert (33). All statistical analyses were performed using SPSS version 21. The response pattern obtained for “Burnout screening tool” and “Workplace screening scale” is briefed in supplementary tables 1 - 7. Further, the descriptive

statistics (mean, SD & 95%CI) for all the constructs (assessments) across various occupations is listed in supplementary tables 8.

Table 2: demographic and occupational details of the participants

Variable		N (%)	GHQ ≥ 2 (%)
Sex	Male	55 (35.9)	13 (23.6)
	Female	98 (64.1)	31 (31.6)
Marital status	Unmarried	32 (20.9)	14 (43.8)
	Married	115 (75.2)	28 (24.3)
	Widow(er) / separated / divorced	6 (3.9)	2 (33.3)
Educational status	Middle school and lower (< 5 years)	26 (17)	0 (0)
	High school and higher secondary (6 - 12 years)	46 (30.1)	10 (21.7)
	Diploma	16 (10.5)	6 (37.5)
	Graduate	36 (23.5)	11 (30.6)
	Post graduate and above	29 (19)	17 (58.6)
Monthly income (INR)	< 5000	13 (8.5)	2 (15.4)
	5001 - 10000	29 (19)	2 (6.9)
	100001 - 20000	42 (27.5)	6 (14.3)
	200001 - 50000	32 (20.9)	8 (25)
	>50000	32 (20.9)	25 (78.1)
Employment status	Contractual	95 (62.1)	23 (24.2)
	Regular	58 (37.9)	21 (36.2)
Occupation	Outdoor data collection / sales	14 (9.2)	2 (14.3)
	Paramedical staff (outdoors) / drivers	19 (12.4)	5 (26.3)
	Nurse	29 (19)	7 (24.1)
	Doctor	23 (15)	18 (78.3)
	Laboratory staff	16 (10.5)	7 (43.8)
	Sanitary workers / Outdoor workers	23 (15)	2 (8.7)
	Security guards / police	23 (15)	2 (8.7)
	Administrative / indoor desk job workers	6 (3.9)	0 (0)

Internal consistency assessment of the tools is described at Table 3. The Cronbach's alpha for "Burnout screening tool" and the "Workplace screening tool" was 0.82 & 0.73 respectively. In order to validate the data collection process, Cronbach's alpha, inter-item correlations and corrected item-scale correlations were estimated for the validated tool GHQ-5 as well.

Table 3: Psychometric properties of the scales

Tool	Cronbach's Alpha	Inter – item correlations (range)	Item-scale correlations (range)
Burnout screening tool	0.82	0.21 - 0.65	0.2 - 0.57
Workplace screening tool	0.73	0.2 - 0.64	0.21 - 0.7
GHQ -5	0.716	0.22 - 0.56	0.37 - 0.58

Factor analysis:

Burnout screening tool:

An exploratory factor analysis of the screening tool responses using conventional principal component analysis, varimax rotation and correlation method, identified 4 components (Table 4). Questions drafted under the construct “Personal accomplishment” clustered against single component (4), while the other constructs “emotional exhaustion” and “depersonalization” had partial overlap in the components.

Table 4: Results of the factor analysis of occupational mental health screening tool

Construct	Questions	Component
Emotional Exhaustion	Are you demotivated to attend work	3
	Does the thought of going to work put you down	3
	Does this work disinterest me	2
	Do you work here solely for money and the job doesn't motivate / encourage you	5
	Are you worried about attending work	1
	Do you continue to think about work related issues even during non-working hours	1
	Do you feel sleepless, loss of appetite due to continuous thoughts about work	1
	Do you feel lively while being at work	1
	Do you feel frustrated by your work	1
	Are you satisfied with your work	5
	Does the thought of work prevent you from enjoying happiness with family & friends	1
Depersonalization	Do you express anger at workplace due to work related stress / excess of work	1
	Does this job make you less caring / indifferent to your fellow colleagues / clients	2
	Have you become insensitive to people around you, since you've been working here	3
	Do you almost lose patience by the end of the workday	3
	Have you been responsible / felt guilty for your colleague's / client's problem(s)	3
Personal accomplishments	Do you feel you've accomplished many worthwhile things in this job	4
	Do you satisfactorily complete your work for the day	4
	Are you satisfied with your efforts in keeping the work atmosphere calm and relaxed	4

Workplace screening tool:

Similar factor analysis of the responses of “Workplace screening tool” identified 4 components, wherein the questions pertaining to the construct “workload” was part of the first component (Table 5). The questions drafted to tap the constructs “Reward” and “Community cooperation”, were part of 2nd and 3rd component respectively with additional overlap with component 4.

Table 5: Results of the factor analysis for workplace assessment screening tool

Construct	Questions	Component
Work load	Do you have to do a lot of work in this job	1
	Are you able to develop sufficient time for your domestic and personal work, considering the quantum of official work	1
	Do you have to work, that requires more than one person to do	1
	Do you feel completing your assignments personally unsatisfied on account of excessive work and lack of time	1

	Do you have to work under tense circumstances (due to excessive work)	1
Reward	Do you get less salary in comparison to the quantum of your labor/work	4
	Are you appropriately rewarded for your hard work/labor and efficient performance	3
	Do you feel the working conditions are satisfactory from the point of view of our welfare and convenience)	3
Community cooperation	Do your colleagues at workplace voluntarily cooperate with your,	2
	Do you feel sufficient mutual co-operation and team spirit exists among the employees of the organization/department	2
	Does the workplace permits you to communicate with your colleagues	4

Performance of the “Burnout screening tool” and “Workplace screening tool” against the screening tool GHQ 5 is reported in table 6. The scales significantly correlated with GHQ - 5 scores as well with each other (0.662). Considering individuals with $\text{GHQ} \geq 2$ as need for intervention by expert (for detailed evaluation and necessary management), the corresponding mean “Burnout screening tool” score, of 25 (Figure 1) and “Workplace screening tool” score of 17 (Figure 2), may be regarded as cut-off scores requiring further expert attention / detailed evaluation. However, a larger sample would be necessary to confirm the cut-off numbers.

Table 6: Reliability statistics of the scales

Scales	Pearson’s correlation coefficient with GHQ - 5
Burnout screening tool	0.694
Workplace screening tool	0.586

Figure 1: Scatterplot of mean “Burnout screening tool” scores plotted against the corresponding GHQ- 5 scores

Figure 2: Scatterplot of mean “Workplace screening tool” scores plotted against corresponding GHQ- 5 scores

Discussion:

Current study aimed at developing a screening tool for assessing the occupational mental health (burnout) and workplace factors detrimental to mental health. The study followed the conventional steps for scale development and its evaluation. “Burnout screening tool” included questions screening for “emotional exhaustion”, “depersonalization” and “personal accomplishment”, while the “Workplace screening tool” questions evaluated “workload”, “reward”, “community-cooperation”, “fairness”, “control” and “values”. The tool on confirming the feasibility in a pilot sample was applied on a larger sample in addition to administering the standardized tool for screening the general mental health (i.e. GHQ-5).

The tools included relatively shorter questions with simple language and ensured easiness in comprehending them, as reflected by all questions being responded by every single participant, irrespective of their educational and occupational backgrounds. These points indicate the acceptability and feasibility of the tool in a wide range of occupational groups. “Control”, “Fairness” & “Values”, the dimensions of workplace assessment are often reported among white collar jobs. As the present study primarily included blue collar and health care professional jobs, the questions pertaining to “Control”, “Fairness” & “Values” were not part of the current evaluation.

The tools exhibited adequate test - retest reliability and internal consistency / reliability (Table 3). The constructs “emotional exhaustion” and “depersonalization” are reported to co-occur and often described as continuum, thereby exhibiting partial overlap of questions pertaining to these constructs in the exploratory factor analysis. Similarly, the “reward” and “community cooperation” constructs of workplace assessment screening tool exhibited partial overlap in the factor analysis.

The tools significantly correlated with the mental health questionnaire, reflecting the tool’s ability to screen the mental health burden. As the scales primarily intended to record mental health attributed to workplace and occupational factors. The strength of correlation with general mental health ranged between moderate – strong. These points favor the scales as potential tools for screening the desired latent constructs (occupational mental health and psychological hazards of the workplace).

The data distribution (burnout screening tool and workplace screening tool) for each of the occupations, demonstrate considerable variations, with clinical doctors reporting highest scores (high levels of burnout scores and relatively poor workplace factors) and the outdoor workers (security guards, sales, data collection) requiring relatively lesser interpersonal contact reported lower scores. Considering the pandemic time period during which the data was collected, the medical professions were loaded with

clinical responsibilities of managing the contagious cases / risk of contracting the illness while executing the clinical duties. Therefore, in view of these conditions it is intuitive that health care professions exhibited relatively higher burnout and workload scores as compared to the outdoor workers or those workers engaged with activities requiring none / minimal human contact or less risk of contracting the illness. These points reinforce the construct validity of the tools (i.e. ability of the tool to screen / record the desired latent construct).

The study is perhaps an earliest attempt to develop a tool for screening the workplace mental health for Indian adult population. The tool was developed involving experts in the field, adhering to the conventional steps mandated for behavioral tool development. The tools were observed to be simple (requires minimal expertise to administer), acceptable and reliable (psychometric properties such as construct and criterion validity and reliability) tool for screening the desired latent constructs (i.e. occupational mental health and workplace factors known to influence the mental health). However, considering the limitations of relatively fewer heterogeneity (skewed) in the occupations / workforce involved in the present study and participants from a particular region of the country, the observations are largely restricted to smaller workforce and local region. Hence, large sample including wide range of occupational and demographic background with longitudinal design and periodic detailed (mental health) evaluation / investigation is essential to validate the tool and confirm the cut-off scores. In addition, the detailed clinical (mental health) evaluation of the participants would be necessary for accurate calculation of the receiver-operating characteristic properties (i.e. sensitivity and specificity) and predictive validity of the scales and its subscales.

Present study is an attempt to develop tool for screening adverse occupational mental health (burnout) and workplace factors that are known to be detrimental for mental health. Considering the magnitude of workforce and relatively naïve the concept of occupational mental health in the country, a tool (such as the one reported in the study) for screening the mentioned constructs are need of the hour. Hence, the proposed simple and easy to administer tool, would aid in recognizing the burnout and aid in early diagnosis and management of those requiring intervention.

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1 Supplementary tables:

2 Supplementary table 1: Response pattern for the GHQ - 5

GHQ - 5	Yes	No
Have you recently lost much sleep over worry ?	34 (22.2)	119 (77.8)
Have you recently felt constantly under strain?	32 (20.9)	121 (79.1)
Have you recently been able to enjoy normal day-to-day activities?	117 (76.5)	36 (23.5)
Have you recently been feeling reasonably happy all things considered?	114 (74.5)	39 (25.5)
Have you recently been feeling unhappy and depressed?	27 (17.6)	128 (82.4)

3 Supplementary table 2: Response pattern for Burnout screening tool, Emotional exhaustion component

Burnout screening tool: Emotional Exhaustion	Never	Sometimes	Always
Are you demotivated to attend work	123 (80.4)	25 (16.3)	5 (3.3)
Does the thought of going to work put you down	130 (85)	23 (15)	0 (0)
Does this work disinterest me	134 (87.6)	13 (8.5)	6 (3.9)
Do you work here solely for money and the job doesn't motivate / encourage you	117 (76.5)	30 (19.6)	6 (3.9)
Are you worried about attending work	116 (75.8)	24 (15.7)	13 (8.5)
Do you continue to think about work related issues even during non-working hours	91 (59.5)	41 (26.8)	21 (13.7)
Do you feel sleepless, loss of appetite due to continuous thoughts about work	109 (71.2)	38 (24.8)	6 (3.9)
Do you feel lively while being at work*	19 (12.4)	21 (13.7)	113 (73.9)
Do you feel frustrated by your work	118 (77.1)	30 (19.6)	5 (3.3)
Are you satisfied with your work*	12 (7.8)	15 (9.8)	126 (82.4)
Does the thought of work prevent you from enjoying happiness with family & friends	103 (67.3)	34 (22.2)	16 (10.5)

4 All questions are scored with "1", "2" and "3" corresponding to "never", "sometimes" and "always" while

5 *Questions are scored in opposite direction

6 Supplementary table 3: Response pattern for Burnout screening tool, depersonalization component

Burnout screening tool: Depersonalization	Never	Sometimes	Always
Do you express anger at workplace due to work related stress / excess of work	104 (68)	45 (29.4)	4 (2.6)
Does this job make you less caring / indifferent to your fellow colleagues / clients	133 (86.9)	16 (10.5)	4 (2.6)
Have you become insensitive to people around you, since you've been working here	135 (88.2)	16 (10.5)	2 (1.3)
Do you almost lose patience by the end of the workday	124 (81)	23 (15)	6 (3.9)
Have you been responsible / felt guilty for your colleague's / client's problem(s)	121 (79.1)	28 (18.3)	4 (2.6)

7 All questions are scored with "1", "2" and "3" corresponding to "never", "sometimes" and "always"

8 Supplementary table 4: Response pattern for Burnout screening tool, personal accomplishment component

Burnout screening tool: Personal accomplishment	Never	Sometimes	Always
Do you feel you've accomplished many worthwhile things in this job	140 (91.5)	12 (7.8)	1 (0.7)
Do you satisfactorily complete your work for the day	146 (95.4)	5 (3.3)	2 (1.3)
Are you satisfied with your efforts in keeping the work atmosphere calm and relaxed	146 (95.4)	5 (3.3)	2 (1.3)

9 All questions are scored with "1", "2" and "3" corresponding to "always", "sometimes" and "never" while

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1 Supplementary table 5: Response pattern for workplace screening tool, work load component

Workplace screening tool: Work load	Never	Sometimes	Always
Do you have to do a lot of work in this job	77 (50.3)	46 (30.1)	30 (19.6)
Are you able to develop sufficient time for your domestic and personal work, considering the quantum of official work*	23 (15.6)	36 (23.5)	94 (61.4)
Do you have to work, that requires more than one person to do	86 (56.2)	46 (30.1)	21 (13.7)
Do you feel completing your assignments personally unsatisfied on account of excessive work and lack of time	114 (74.5)	23 (15)	16 (10.5)
Do you have to work under tense circumstances (due to excessive work)	117 (76.5)	28 (18.3)	8 (5.2)

2 All questions are scored with "1", "2" and "3" corresponding to "never", "sometimes" and "always" while

3 *Questions are scored in opposite direction

4 Supplementary table 6: Response pattern for workplace screening tool, reward component

Workplace screening tool: Reward	Never	Sometimes	Always
Do you get less salary in comparison to the quantum of your labor/work	55 (35.9)	34 (22.2)	64 (41.8)
Are you appropriately rewarded for your hard work/labor and efficient performance*	34 (22.2)	44 (28.8)	75 (49)
Do you feel the working conditions are satisfactory from the point of view of our welfare and convenience *	32 (20.9)	33 (21.6)	88 (57.5)

5 All questions are scored with "1", "2" and "3" corresponding to "never", "sometimes" and "always" while

6 *Questions are scored in opposite direction

7 Supplementary table 7: Response pattern for workplace screening tool, Community – cooperation component

Workplace screening tool: Community	Never	Sometimes	Always
Do your colleagues at workplace voluntarily cooperate with your,	2 (1.3)	9 (5.9)	142 (92.8)
Do you feel sufficient mutual co-operation and team spirit exists among the employees of the organization/department	2 (1.3)	7 (4.6)	144 (94.1)
Does the workplace permits you to communicate with your colleagues	2 (1.3)	4 (2.6)	147 (96.1)

8 All questions are scored with "1", "2" and "3" corresponding to "always", "sometimes" and "never"

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1 Supplementary table 8: Descriptive statistics of the scales across various occupational groups

	N	Mean	Std. Deviation	Std. Error	95 % CI Lower	95 CI Upper	Min.	Max.
GHQ – 5 Total								
Outdoor data collection / sales	14	.714	1.1387	.3043	.057	1.372	0	4
Paramedical staff (outdoors) / drivers	19	1.316	1.6348	.3750	.528	2.104	0	5
Administrative / indoor desk job	6	0.833	1.6021	0.654	0.001	2.515	0	4
Nurse	29	1.034	1.1490	.2134	.597	1.472	0	4
Doctor	23	2.478	1.6200	.3378	1.778	3.179	0	5
Laboratory staff	16	1.438	1.4592	.3648	.660	2.215	0	5
Sanitary workers / Outdoor workers	23	.391	.8022	.1183	.153	.630	0	4
Security Guards / police	23	.391	.8022	.1183	.153	.630	0	4
Total	153	1.079	1.4072	.1145	.853	1.306	0	5
Burnout screening tool: Emotional Exhaustion								
Outdoor data collection / sales	14	13.929	2.9473	.7877	12.227	15.630	11	19
Paramedical staff (outdoors) / drivers	19	14.263	3.1419	.7208	12.749	15.777	11	23
Administrative / indoor desk job	6	15.333	4.1312	1.6865	10.998	19.669	11	23
Nurse	29	14.517	2.8985	.5382	13.415	15.620	11	22
Doctor	23	17.043	4.2478	.8857	15.207	18.880	11	26
Laboratory staff	16	14.625	1.8574	.4644	13.635	15.615	11	19
Sanitary workers / Outdoor workers	23	12.826	1.7926	.2643	12.294	13.358	11	17
Security Guards / police	23	12.826	1.7926	.2643	12.294	13.358	11	17
Total	153	14.298	3.0677	.2496	13.805	14.791	11	26
Burnout screening tool : Personal Accomplishment								
Outdoor data collection / sales	14	3.000	.0000	.0000	3.000	3.000	3	3
Paramedical staff (outdoors) / drivers	19	3.368	.6840	.1569	3.039	3.698	3	5
Administrative / indoor desk job	6	3.000	.0000	.0000	3.000	3.000	3	3
Nurse	29	3.069	.2579	.0479	2.971	3.167	3	4
Doctor	23	3.826	1.4030	.2925	3.219	4.433	3	8
Laboratory staff	16	3.063	.2500	.0625	2.929	3.196	3	4
Sanitary workers / Outdoor workers	23	3.065	.3267	.0482	2.968	3.162	3	5
Security Guards / police	23	3.065	.3267	.0482	2.968	3.162	3	5
Total	153	3.212	.6891	.0561	3.101	3.323	3	8
Burnout screening tool: Depersonalization								
Outdoor data collection / sales	14	5.571	.7559	.2020	5.135	6.008	5	7
Paramedical staff (outdoors) / drivers	19	6.000	2.0817	.4776	4.997	7.003	5	13

Administrative / indoor desk job	6	7.167	2.6394	1.0775	4.397	9.937	5	12
Nurse	29	5.966	1.0851	.2015	5.553	6.378	5	9
Doctor	23	7.304	1.9871	.4143	6.445	8.164	5	12
Laboratory staff	16	6.000	1.3663	.3416	5.272	6.728	5	9
Sanitary workers / Outdoor workers	23	5.674	1.1364	.1675	5.336	6.011	5	9
Security Guards / police	23	5.674	1.1364	.1675	5.336	6.011	5	9
Total	153	6.066	1.5129	.1231	5.823	6.309	5	13
Burnout screening tool Total								
Outdoor data collection / sales	14	22.5000	2.98071	.79663	20.7790	24.2210	19	27
Paramedical staff (outdoors) / drivers	19	23.6316	5.21973	1.19749	21.1157	26.1474	19	39
Administrative / indoor desk job	6	25.5000	6.28490	2.56580	18.9044	32.0956	21	38
Nurse	29	23.5517	3.72814	.69230	22.1336	24.9698	19	33
Doctor	23	28.1739	6.28600	1.31072	25.4556	30.8922	19	44
Laboratory staff	16	23.6875	2.60048	.65012	22.3018	25.0732	19	30
Sanitary workers / Outdoor workers	23	21.5652	2.75400	.40606	20.7474	22.3831	19	29
Security Guards / police	23	21.5652	2.75400	.40606	20.7474	22.3831	19	29
Total	153	23.5762	4.47279	.36399	22.8569	24.2954	19	44
Workplace screening tool: Work load								
Outdoor data collection / sales	14	6.64	1.277	.341	5.91	7.38	5	9
Paramedical staff (outdoors) / drivers	19	7.79	3.207	.736	6.24	9.34	5	15
Administrative / indoor desk job	6	8.67	3.670	1.498	4.82	12.52	5	14
Nurse	29	7.45	2.063	.383	6.66	8.23	5	14
Doctor	23	9.96	3.377	.704	8.50	11.42	5	15
Laboratory staff	16	8.25	2.295	.574	7.03	9.47	5	13
Sanitary workers / Outdoor workers	23	5.87	1.310	.193	5.48	6.26	5	12
Security Guards / police	23	5.87	1.310	.193	5.48	6.26	5	12
Total	153	7.42	2.639	.215	6.99	7.84	5	15
Workplace screening tool: Reward								
Outdoor data collection / sales	14	5.50	1.225	.327	4.79	6.21	3	7
Paramedical staff (outdoors) / drivers	19	6.37	1.606	.368	5.59	7.14	4	9
Administrative / indoor desk job	6	6.00	1.549	.632	4.37	7.63	5	9
Nurse	29	5.03	1.451	.269	4.48	5.59	3	8
Doctor	23	5.70	1.941	.405	4.86	6.53	3	9
Laboratory staff	16	4.88	1.996	.499	3.81	5.94	3	9
Sanitary workers / Outdoor workers	23	5.24	1.754	.259	4.72	5.76	3	9
Security Guards / police	23	5.24	1.754	.259	4.72	5.76	3	9
Total	153	5.43	1.730	.141	5.15	5.71	3	9
Workplace screening tool: Community - Communication								

Outdoor data collection / sales	14	3.00	.000	.000	3.00	3.00	3	3
Paramedical staff (outdoors) / drivers	19	3.32	.582	.134	3.04	3.60	3	5
Administrative / indoor desk job	6	3.00	.000	.000	3.00	3.00	3	3
Nurse	29	3.10	.409	.076	2.95	3.26	3	5
Doctor	23	3.70	1.105	.230	3.22	4.17	3	7
Laboratory staff	16	3.00	.000	.000	3.00	3.00	3	3
Sanitary workers / Outdoor workers	23	3.15	.515	.076	3.00	3.31	3	5
Security Guards / police	23	3.15	.515	.076	3.00	3.31	3	5
Total	153	3.21	.618	.050	3.11	3.31	3	7
Workplace screening tool total								
Outdoor data collection / sales	14	15.1429	1.87523	.50118	14.0601	16.2256	11	19
Paramedical staff (outdoors) / drivers	19	17.4737	4.01896	.92201	15.5366	19.4108	12	24
Administrative / indoor desk job	6	17.6667	4.32049	1.76383	13.1326	22.2007	14	24
Nurse	29	15.5862	3.05330	.56698	14.4248	16.7476	11	25
Doctor	23	19.3478	5.13109	1.06991	17.1290	21.5667	11	31
Laboratory staff	16	16.1250	3.28380	.82095	14.3752	17.8748	11	21
Sanitary workers / Outdoor workers	23	14.2609	2.42611	.35771	13.5404	14.9813	11	20
Security Guards / police	23	14.2609	2.42611	.35771	13.5404	14.9813	11	20
Total	153	16.0596	3.76516	.30640	15.4542	16.6650	11	31