SICK BUILDING SYNDROME AND JOB PERFORMANCE IN WOMEN FACTORY WORKERS

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ABSTRACT

Objective: To investigate the relationship between sick building syndrome (SBS) and job performance of women factory workers.

Methodology: This was a correlational study. A sample of 200 women working in different industrial sectors including pharmaceuticals, hosiery, polyester fiber, and stitching units was recruited with purposive sampling technique,. Indoor Air Quality (IAQ)[1] was employed to assess sick building syndrome while Individual Work Performance Questionnaire (IWPQ)[2] was used to assess job performance.

Results: Results for correlation analyses revealed significant relationship between SBS and job performance while demographic variables including age, family system, working hours as negatively correlated with SBS and job performance. Moreover, SBS was found to be a significant negative predictor of job performance, while age was found to be a significant negative predictor of contextual and adaptive performance domains of job performance.

Conclusion: It was concluded that SBS negatively affects the performance level of the factory workers.

Key Words: Factory workers; Job performance; Sick Building Syndrome

INTRODUCTION

Sick building syndrome (SBS) consists of a group of mucosal, skin, and general symptoms that are temporally related to working in particular buildings. It is the workers who are symptomatic, but the building or its services which are the cause[3]. The systematic investigation on SBS started in the last decade and is normally characterized by eye, nose, and throat irritation; body pains, weariness, chest rigidity and sometimes shakiness including other similar conditions[4]. It is regarded as a reason of apparently high occurrence of illness in the inhabitants of closed places, where fresh air do not circulate[5, 6]. It is also termed as building related illness, which is related to the man-made eco-system[7-9]. Job performance assesses whether a person performs a job well which is an important criterion for organizational outcomes and success. It is an individual-level variable, or something a single person does[10, 11]. The most ordinarily revealed side effects of building disorder are identified with skin aggravation, eye disturbance, respiratory manifestations, interpersonal discords, nausea and inactivity. There are wide variety of indications of natural and built in debilitating building factors that can cause harm to the wellbeing of the inhabitants while they are in a building. Some of such natural components can be temperature, dampness, sufficient ventilation, acoustic solace and lighting and are normally eased when the inhabitant leaves the building. But at times, these natural factors as well as the manifestations caused by building related substances can cause irreversible impact that do not generally resolve when the person leaves the building[12, 13].

It is demonstrated that ecological situations considerably affect wellbeing and efficiency. Prospective fitness and efficiency compensations are not yet usually measured in financial intentions relating to the building project and setup. A few sample intentions have also uncovered that numerous methods to improve the inside air situation are economical only when better temperature-controlled environments are designed, [17-19]. Numerous studies have described performance and heat subsequently in the earlier review regarding environmental factors contributing to probable mental health problems [17-19]. Comparative examination was performed in an aerated and cooled business shops whereas some studies distinguished a private job in the field positions as compared to working in the closed factory areas[20 25].

Being faculty members at a university with 8-10 of-

fice hours daily, we experience several environmental issues which directly effect our performance and participation at workplace, especially during adverse environmental conditions and limited facilities, it becomes quite difficult for us to give our maximum performance and same is true for students and staff as well. This was the prime motive of conducting this research The current research investigated the undeniable effects of SBS on job performance of the factory workers.

Objectives:

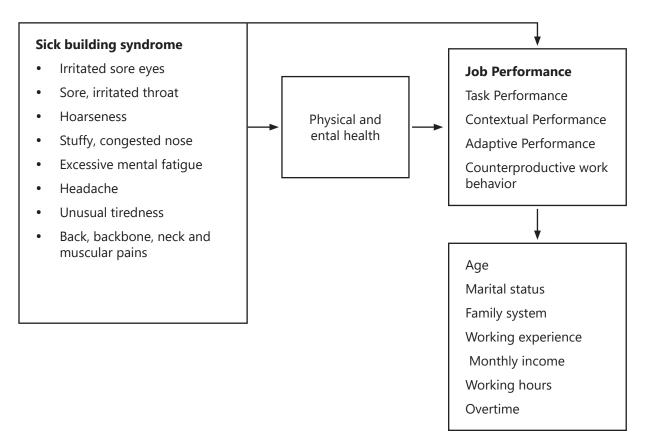1. To examine the relationship between sick building syndrome and job performance in women factory workers.

Hypotheses:

1. There would likely to be a negative relationship between sick building syndrome and job performance of women factory workers.

2. Sick building syndrome would likely to predict job performance in women factory workers.

METHODOLOGY

Through correlational research design, the association and prediction between the study variables were investigated. A sample of 200 was recruited from women working in different factories of Lahore including pharmaceuticals, hosiery, polyester fiber, and stitching units by employing purposive sampling technique. The sample size was determined by using G-power[26,27]. Only those women were included whose health problems started after joining the specific factory job. Assessment was done by applying Survey of IAQ1 to estimate the prevalence of sick building syndrome while IWFQ[2], which consisted of 23 items along with 4 dimensions (task performance, contextual performance, adaptive performance and counterproductive work) was employed to measure job performance. All items had a remembrance period of 3 months on a 5-point rating scale ranging from 1 to 5. All types of ethical issues were duly considered and applied while collecting and analyzing the data, such as permission from the relevant authorities for conducting research as well as privacy, confidentiality and anonymity of the participants.

A hypothesized model presenting sick building syndrome and job performance of women factory workers

Sick building syndrome

- Irritated sore eyes
- Sore, irritated throat
- Hoarseness
- Stuffy, congested nose
- Excessive mental fatigue
- Headache
- Unusual tiredness
- Back, backbone, neck and muscular pains

Physical and ental health

Job Performance

Task Performance

Contextual Performance

Adaptive Performance

Counterproductive work behavior

Age

Marital status

Family system

Working experience

 Monthly income

Working hours

Overtime

Quantitative data collected with survey method was analyzed through SPSS version 21 and involved four key steps. In the first step, descriptive statistics were calculated to assess the means, standard deviations and frequencies of the demographic variables. In the second step, reliability analysis were applied to the assessment scales for study variables. In the third step, correlation analysis was applied to evaluate the associations among demographic and study variables. In the final and fourth step, hierarchical regression analysis was conducted to find out the predictors of job performance.

RESULTS

The findings of the present research are presented for sick building syndrome and job performance of female factory workers.

Table 1 shows descriptive statistics of the demographic variables.

Table 2 shows the Reliability Coefficients of the scales used in the study.

Table 3 contains means, standard deviations, internal consistency index (alpha coefficient) for all scales used in this study. The results showed that all scales of the present study were internally consistent as alpha coefficient of all scales was above .70.

Correlation matrixes in Table 3 showed that sick building syndrome was negatively correlated with task performance, contextual performance and counterproductive work behavior while positively correlated with adaptive performance. Moreover, marital status, work experience and monthly income were positively correlated with sick building syndrome whereas region, over time, working hours per day were negatively correlated with dimensions of job performance Further,

marital status, and working hours per day were negatively correlated with all the dimensions of job performance. Lastly, age and family system were negatively correlated with sick building syndrome as well as task performance, counterproductive work behavior and contextual dimensions of job performance.

Table 4 shows hierarchal regression analysis for predicting job performance of female factory workers and associated subscales. Overall model 2 for task performance explained 90% variance in task performance Fchange (9, 50) = 50.58, p < .001. In model 1 age was significant negative predictor of job performance however in model 2 after controlling for demographic variables, family system and sick building syndrome appeared as significant predictor of task performance.

Overall Model 2 for contextual performance explained 81% variance in control Fchange (9, 50) = 23.07, p < .001. In model 1, age was significant negative predictor of contextual performance however in model 2, after controlling for demographic variable, sick building syndrome appeared as significant predictor of contextual performance. 2.

Similarly, overall Model 2 for adaptive performance explained 37% variance in adaptive performance Fchange (9, 50) = 3.23, p < .01. In model 1, age was significant negative predictor of adaptive performance however in model 2 after controlling for demographic variables. sick building syndrome appeared as significant predictor of adaptive performance. Model 2 for counter productive work behavior overall explained 38% variance in counter productive work behavior Fchange (9, 50) = 3.08, p < .01. In model 2 after controlling for demographic variables sick building syndrome appeared as significant predictor of counter productive work behavior. For all other Table IV results were non-significant

Table 1: Descriptive statistics of demographic characteristics of study sample (N=200)

Variables	Categories	f	%
Family System	Nuclear	150	75.0
	Joint	50	25.2
Regional Affiliation	Urban	110	55.0
	Rural	90	45.3
No. of Children	2	120	60
	3	10	5
Marital Status	Married	130	65
	Unmarried	70	35
Mean Age years (±SD)	29.66 (±11.22)		
Mean monthly Income Rupees (±SD)	3633 (±4244.16)		
Work experience in this	3.60 (±1.35)		
factory Working hours per day (±SD)	2.17 (±1.10)		
Overtime hours (±SD)	2.52 (±10.12)		

Table 2: Reliability Analysis of the Scales (N=200)

Variable	k	α	M	SD	Range Poten-tial	Actual
Sick Building syndrome	10	.91	14.00	5.45	10-30	15-22
Job performance	23	.87	17.33	4.18	23-115	20-98
Task performance	5	.70	11.50	3.10	5-25	5-16
Contextual performance interpersonal	4	.70	10.46	3.31	4-20	4-16
Contextual performance organizational	4	.71	6.68	2.67	4-20	4-10
Adaptive Performance	6	.90	6.93	2.98	6-30	6-22
Counterproductive work behavior	4	.73	8.35	1.90	4-20	5-11

Note. k = No of items, α = Cronbach's alpha. M = Mean, SD = Standard deviation

Table 3: Correlations among demographic variables in women factory workers (N=200)

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Age	-	-.23	.09	.62	.16*	.29**	.09	-.02**	-.05**	-.38**	.04	-.25**
Marital status		-	-.43	-.19*	.09	-.32	-.04	.17*	-.20**	-.06	-.14*	-.19*
Family system			-	.03	-.08	.67	-.02	-.02*	.09	.34**	.92	-.19**
Work experience				-	.15**	.32	-.04	.04**	.09	-.34**	.03	-.97
Monthly income					-	-.33**	.06	.12*	.01	-.56**	-.20*	-.39**
Working hours per day						-	-.18	.09	-.06**	-.61**	-.83**	.35**
Over time							-	-0.3	-21	-01	-02	-01
Sick building syndrome								-	-.34**	-.82*	.52*	-.14*
Task perfor-mance									-	-.09	-.16**	-.15**
Contextual per-formance										-	-.47**	-.21**
Adaptive perfor-mance											-	-.04
Counterpro-ductive work behavior												-

Note: *p<.05, **p<.01,***p<.001.

in both models.

Similarly, overall Model 2 for optimizing explained 89% variance in job performance Fchange (9, 50) = 46.82, p < .01. In model 1 age is significant predictors of job performance however in model 2 after controlling for demographic variables, sick building syndrome appeared as significant predictor of job performance. For all other table 4 results were non-significant in both models and impact of age and family system were also non-significant in model 2.

Figure 1 shows Emerged Model of the study.

DISCUSSION

Sick building syndrome including poor Indoor Ecological Quality (IEQ) has been frequently censured for triggering physical and psychological symptoms directly affecting the health and well-being of the individuals. But due to lack of indigenous literature, its effects haven't been widely recognized and understood in Pakistan. This highlights the importance of the present study which investigates the relationship of SBS with job performance in women factory workers.
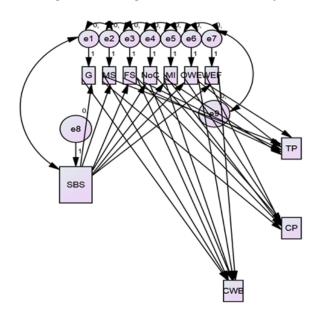
Our first hypothesis argued that sick building syn-

Table 4: Hierarchical Regression Analysis Predicting job performance from demographic variables and sick building syndrome in women factory workers (N=200)

Variable	Task Performance		Contextual performance		Adaptive Performance		Counter productive work behavior		Job performance	
	ΔR2	B	ΔR2	β	ΔR2	β	ΔR2	B	ΔR2	β
Step 1	.60		.51		.27		.13		.62	
Age		-.70***		-.65***		.34**		-.29**		-.71***
Family system		-.09		-.09**		.22		-.02		-.21**
No of children if married		.19		.18		-.28		.32		.30*
Work experience		-.61**		-.09**		.05		-.00		-.05**
Monthly income		-.07		-.03**		.13		-.13**		-.12
Working hours		-.05**		-.12		-.08**		-.06		-.04**
Over time		.25*		.17		-.20		-.09**		-.13**
Step 2	.30		.29		.09		.23		.27	
Sick building syndrome		-.98***		-.96***		.56**		-.86***		-.93***
Total R2	.90		.81		.37		.38		.89	

Figure 1: Emerged Model of the study

drome (SBS) would likely to be negatively associated with job performance in women factory workers and our findings revealed that there was indeed a negative association between SBS and job performance. These findings are consistent with previous studies literature [28, 29, 30] which highlights that indeed workplace environment, even if it's the physical aspect have negative effect at the performance of the staff and workers.

Similarly, our results further showed that demographics namely age and family system had negative relationship with SBS and job performance, while marital status, experience and income level had positive relationship with job performance only. These findings are consistent with the demographics explored in other studies as well[28, 30, 31] which duly contextualize our local indigenous experiences as we regularly observe such trends in our routine lives.

Our second hypothesis argued that SBS would likely to be a predictor of job performance and our findings revealed that SBS was indeed a significant predictor of job performance of women factory workers. These results were also congruent with other reported studies[31, 32]. These findings highlight the undeniably importance and effects of work conditions on workers' performance as they set a baseline for their efficiency[33].

Lastly, our findings showed that age turned out to be a negative predictor of job performance, while family system and SBS both predicted job performance. These results are also consistent with previous findings which explored the role of demographics in respect to job performance and SBS[34].

LIMITATIONS

- Sample was small and it was only taken from Lahore. Thus the results of the present research cannot be generalized.

- The tools used in this research were not indigenous.

- Another limitation was the access to data. The information gathered was difficult to acquire

since the employees of some organizations were hesitant to share their true opinions.

SUGGESTIONS

Following are suggestions from the present research:

- Sample size should be large enough to generalize the results.

- Sample should be taken from different cities.

- There should be indigenous tools and should be translated in Urdu.

IMPLICATIONS

Some implications of present research are given below:

- This research can provide help for further research in future about sick building syndrome, and job performance.

- This examination grounded evidences to see the incidences, symptoms and causes of sick building syndrome, techniques to avoid additional occurrences of sick building syndrome and behaviors to improve people's happiness and performance when they are inhabitants of an office block.

- This exploration contributes on the way to the well-being of civilization as the consequences make apprehension about the standing of worthy employed setting for workers job satisfaction, job performance and mental health.

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CONTRIBUTORS