

Health Effects of Working in Night Shifts – A Study of Male and Female Employees at Call Centres

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Abstract

Working in night shifts has never been an easy task for workers. Primarily, because of biological cycle or popularly known as circadian rhythm, our body is built to work during day and sleep at night. Hence, physical and mental health problems are faced by workers who work at night shifts and sleep during daytime. The problems rather multiply for females working in night shifts mainly because of dual responsibility of office and domestic work. Empirical research in many foreign countries has found evidences of health related complications among female night shift workers more than their male counterparts. To examine the same, this study has been conducted on 255 male and 133 female workers working in night shifts in call centres. This study has been conducted in three cities namely Chandigarh Panchkula and Mohali. Results have indicated that some specific problems like eyesight, chest infection, hypertension, loss of appetite and backache have been reported more in case of female workers. However for other problems like sleep disorder, depression, stomach related problems, obesity etc. have similar instances among all workers and so female workers were not significantly different from Male workers.

Keywords: Night Shift, Insomnia, Sleep Disorders, Health Effects

Introduction

Industrial revolution paved the way of mass production and globalisation helped expanding horizons of any business. This eventually increased the demand of workforce. Lately, even female workers started joining. To speed up business processes and to utilise the time available to the maximum extent, shift work system was introduced where by factories and offices could run 24 hours a day. However, shift work system had its own pros and cons. If it assured the speeding up of process and doing the job in lesser number of days, it also created health problems for workers; both physical and mental. Female workers also suffered from health related issues, sleep disorders, and burning out problem.

However, for female workers, the problem arises due to the dual demand of both professional and domestic work. The problem further intensifies for female workers who are mothers of dependent children. Hence, the role of gender in health work relationship takes a new shape for female workers. Striking a balance between professional life and personal or family life becomes a real challenge for female workers in particular. This study has been an endeavour to explore the health effects of night work ok and to compare male and female employees in relation to health effects of working at night shifts.

Review of Literature

Cheng & Cheng (2017) examine the gender differences in relation to physical and mental health effects of night shift working. Taking a sample of 16440 employees in Taiwan, they concluded that among female employees, the risk was highest of Burnout and mental disorders. Female employees also faced the problem of insomnia. Bara & Arber (2009) conducted a study of 9765 shift workers in United Kingdom. They concluded that night shift work head a negative impact on mental health of male employees while female employees were mainly affected due to varied shift patterns. Silva-Costa et al. (2015) examined the prevalence of diabetes among night shift workers. Taking a sample of 15105 civil servants from Brazil, the collected data with the help of questionnaire. They concluded that long years of night shift work was strongly associated with diabetes among women, but the same association was quite low among men.

Fullick et al. (2009) conducted another study in United Kingdom on 24 female and 71 male shift workers. They found that male workers had better coping ability with night shift work ok then female workers. Puttonen et al. (2009) studied the risk of cardiovascular disease on a sample of 1543 young adults working in shift systems. The results indicated that men had more risk of cardiovascular disease due to shift work while women workers had no such association. Admi et al. (2008) examined the self-perceived and sleep among 688 shift working health workers. Dibs of that female shift workers had faced more health problems besides sleep disorders than their male counterparts.

Ansiu et al. (2008) focused on sleep duration and sleep quality among 2337 shift workers in France. Researcher did not find any evidence of direct interaction between Gender and the sleep patterns. However, they claimed that female workers were at higher risk of sleep related diseases. Shen & Dicker (2008) compared 10 day working managers with 14 shift workers in a food company in Australia. They also did not find any direct evidence of difference of workers' tolerance between day working managers and shift working managers.

Tüchsen et al. (2008) covered a large simple of 3980 female and 4025 male shift workers in Denmark. Area of work was related to disability pension. They concluded that shift work had caused disability among female workers however there was no such association among male shift workers. Rotenberg et al. (2001) examined sleep and daily life of night shift workers along with their experiences. Researchers used semi-structured method to collect data. Results indicated severe effects of night work on females especially those who were mothers and had dependent children.

Problem Definition

For quite a long period, research has been conducted on the issues of shift work on night work, health effects of such shift works, impacts on sleep patterns, and productivity of workers during night shifts. However, in recent times, large number of women are joining various service sectors, specifically call Centres and BPOs. Due to the enormous amount of work available, these work on shift basis, typically running 24 hours. However, when it comes to female workers, research has been in a decade to examine the ill effects of night shift work specifically for female workers. It is well known that biologically male and female workers are different. Hence it is need to study and compare the ill effects of night shift on sleep and health of female workers different from male workers. With this idea, the present study has been conducted.

Objective of the Study

The present study has been conducted to examine the effects of night shift work on the mental health of workers working in call centres. An important sub-objective of this study has been to compare these effects among male and female workers. The idea behind this comparison is the simple belief that female workers working in night shifts maybe feeling exhausted and burned-out due to dual responsibilities of office and home.

Scope of the Study

The study has covered three main cities in North India viz. Chandigarh, Panchkula, and Mohali. This study is focused on only those workers who work on night shifts exclusively or work on both day and night shifts. As qualifying criteria, only those workers have been selected who have worked for at least 6 months in night shifts. Besides, only married people have been selected as they carry dual responsibility of office as well as home.

Sampling & Data Collection

A total of 500 night shift workers were finalized. A well-structured questionnaire was circulated among these selected workers. Out of this, 388 workers responded and their responses were analysed. The sample included 255 male and 133 female workers.

Analytical Tools

To understand the perception of night shift workers in relation to mental health and other issues associated with night shift work, a 5 point scale was used. Responses of these workers were shown with the help of counts and percentages. In order to compare the responses of male and female workers, non-parametric median test has been used.

Analysis & Interpretation

For the purpose of analysis, two tables have been presented below. Table-1 deals with frequencies and percentage of responses against each health effect. Table-2 shows the comparison of male and female workers and also puts forth the results of median test which has been used to compare male and female workers. As per table-1, major complaint reported by night shift workers happens to be obese/overweight. About 22% of the respondents have reported this problem. Thereafter, the problem of backache, digestive system related

disorders, and eyesight problems have been reported. Very few respondents have been found to be suffering from ear or hearing related problem, voice or speech loss disorder, and chest related infection.

Table-1: Health Problems of Night Shift Workers

		Never	Rarely	Sometimes	Often	Very Often
Sleep disorder	Count	160	61	105	34	28
	%age	41%	16%	27%	9%	7%
Digestive system related disorder	Count	161	73	84	44	26
	%age	41%	19%	22%	11%	7%
Eye sight problem	Count	168	64	92	42	22
	%age	43%	16%	24%	11%	6%
Depression	Count	200	56	78	33	21
	%age	52%	14%	20%	9%	5%
Severe stomach related problems	Count	170	71	104	24	19
	%age	44%	18%	27%	6%	5%
Ear / hearing problem	Count	236	52	71	13	16
	%age	61%	13%	18%	3%	4%
Nervousness	Count	201	61	75	28	23
	%age	52%	16%	19%	7%	6%
Voice / speech loss disorder	Count	251	50	58	15	14
	%age	65%	13%	15%	4%	4%
Lethargy (Laziness)	Count	153	75	97	38	25
	%age	39%	19%	25%	10%	6%
Chest related infection	Count	244	57	54	15	18
	%age	63%	15%	14%	4%	5%
Backache	Count	132	63	123	37	33
	%age	34%	16%	32%	10%	9%
Overweight / Obesity	Count	182	61	61	41	43
	%age	47%	16%	16%	11%	11%
Loss of appetite	Count	195	58	77	31	27
	%age	50%	15%	20%	8%	7%
Hypertension (High BP)	Count	211	61	64	23	29
	%age	54%	16%	16%	6%	7%

Table-2 shows the results of median test. For each of the problem or disorder, the count of male and female workers above and below median value has been shown. In brackets, the percentages have been shown corresponding to male and female workers. Further columns show the values of Chi square along with test significance in the last column. It can be observed that in case of five specific problems, chi square value has been found to be significant. In case of the remaining nine problems, chi square value has been insignificant. 5 problems with significant results eyesight problem, chest related infection, backache, loss of appetite, and hypertension or high BP.

Table-2: Median Test – Male vs. Female Workers

		Gender		Chi-Square	df	Asymp. Sig.
		Male	Female			
Sleep disorder	> Median	104 (40.78)	63 (47.37)	1.546	1	0.214
	<= Median	151 (59.22)	70 (52.63)			
Digestive system related disorder	> Median	98 (38.43)	56 (42.11)	0.493	1	0.483
	<= Median	157 (61.57)	77 (57.89)			
Eye sight problem	> Median	92 (36.08)	64 (48.12)	5.272	1	0.022*
	<= Median	163 (63.92)	69 (51.88)			
Depression	> Median	118 (46.27)	70 (52.63)	1.414	1	0.234
	<= Median	137 (53.73)	63 (47.37)			
Severe stomach related problems	> Median	90 (35.29)	57 (42.86)	2.125	1	0.145
	<= Median	165 (64.71)	76 (57.14)			
Ear / hearing problem	> Median	94 (36.86)	58 (43.61)	1.67	1	0.196
	<= Median	161 (63.14)	75 (56.39)			
Nervousness	> Median	118 (46.27)	69 (51.88)	1.1	1	0.294
	<= Median	137 (53.73)	64 (48.12)			
Voice / speech loss disorder	> Median	82 (32.16)	55 (41.35)	3.237	1	0.072
	<= Median	173 (67.84)	78 (58.65)			
Lethargy (Laziness)	> Median	98 (38.43)	62 (46.62)	2.417	1	0.12
	<= Median	157 (61.57)	71 (53.38)			
Chest related infection	> Median	86 (33.73)	58 (43.61)	4.267	1	0.039*
	<= Median	169 (66.27)	75 (56.39)			
Backache	> Median	118 (46.27)	75 (56.39)	4.193	1	0.041*
	<= Median	137 (53.73)	58 (43.61)			
Overweight / Obesity	> Median	91 (35.69)	54 (40.6)	0.902	1	0.342
	<= Median	164 (64.31)	79 (59.4)			
Loss of appetite	> Median	115 (45.1)	78 (58.65)	6.418	1	0.011*
	<= Median	140 (54.9)	55 (41.35)			
Hypertension (High BP)	> Median	104 (40.78)	73 (54.89)	7.008	1	0.008*
	<= Median	151 (59.22)	60 (45.11)			

Significant at 5% level of significance.

Figures in brackets are percentages.

For all these problems, however, the percentage of female workers which are above median value are more than percentage of male workers. Male workers are having higher percentage in less than median category. It clearly indicates that female night shift workers suffer more due to eyesight, chest related infection, backache, loss of appetite and hypertension. However for other problems, there is no significant difference between male and female night shift workers. It suggests that the intensity of problem is similar for both male and female workers for such problems.

Conclusion

As concluding remarks, it can be said that night shift female workers tend to suffer more than male workers due to problems like eyesight, backache, chest related infection, loss of appetite and hypertension. These findings are totally in line with empirical studies conducted in foreign countries which indicated that female staff workers could suffer more than male workers during night shift from physical and mental health problems. However, some other problems like sleep disorder, digestive system related disorder, depression, nervousness, lethargy, stomach related problems have been among all night shift workers without any gender difference.

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