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OCCUPATIONAL RISK FACTORS ASSOCIATED WITH REPRODUCTIVE HEALTH OF WORKING WOMEN: A CASE STUDY OF UNIVERSITY OF GUJRAT

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ABSTRACT

Occupational risk factors are those factors which directly or indirectly influence the health and performance of the workers. Present study aims at understanding the association between occupational risk factors and reproductive health of married working women in University of Gujrat (UoG), Pakistan. In Pakistan the opportunities for working women is not appreciable as compared to developed countries. Women are mostly secluded from such opportunities. So in this study researchers try to highlight the importance of the issue in the context of the Pakistan and more specifically working women in UoG. For the present study 110 married working women were sampled form University of Gujrat through simple random sampling by using sample size determinant formula. The results showed that there is a positive association between occupational risk factors and reproductive health of married working women.

Key words: *Occupation, Risk Factor, Reproductive Health, Working women, Pakistan*

INTRODUCTION

There are different risk factors associated to the working people's reproductive health within the given environment of the workplace. There is greater possibility of the harm of the reproductive health of male and female working in the factories where gasses, radiation and related things are higher in capacity and magnitude. But in the case of jobs like, academia, banks, and like organizations the issue of the risk factors are totally different to the industries. Participation of women is ensured by the laps of globalization and demand of the hour. When we look into the role of women in today's world, women are employed in every industry and institute and hold nearly every kind of jobs. Comparable data for the last twenty years clearly indicate that substantial shift in the gender distribution of many occupations has occurred and, despite these shifts, women and men still tend to be concentrated in different occupations. Women are overrepresented in clerical, sales and services occupations, while men are disproportionately employed in craft and laborer jobs. Predominately female occupations such as nursing, secretarial, child care and textile sewing machine operators have remained dominated by women. Conversely, the proportion of females to males' engineers, lawyers, physicians, police and college teachers has changed, with females representing a large proportion in these occupations (USDOL, 1995).

In the case of the manual jobs and industrial sector jobs of the lower staff there is higher possibilities of being victimize by the hazardous chemicals and gasses. International Labour Organization (1998) identified that "Thousands of hazardous chemicals are produced and used in the wide variety of workplaces, all over the world. Some of these have negative effects on the reproductive health of both male and female workers who are exposed to them. There are also a verity of physical and biological agents (such as radiation and bacteria) used in many workplaces and expose workers to additional reproductive hazards. Additionally, there are many work situations (such as work which is highly stressful or shift work) that may cause negative effects on the reproductive systems of male and female workers." But in the case of the academia, situation is not comparatively discouraging to the laboratory work. Women might be facing some of the stresses either to complete their tasks within the given time period or overburdened by the work. So in each case it might be affecting women's reproductive health.

Talamanca and Hatch, (1994) have discussed that "The menstrual cycle can be disrupted by strenuous physical work, with manifestations of dysmenorrheal, amenorrhea, anovulatory cycles and reduction in fertility. Several studies have shown the effects of physically demanding and stressful work both in developing countries (agriculture, industry etc) and developed countries (service sectors, air transport, nursing, the armed forces etc)." There are some other issues likewise the undersocdition of the workplace which might cause problem for the women's health issues. Blatter et al. (2003) assert that "Many work settings throughout the world, women labor under conditions that adversely affect their reproductive health. Physical, biological, psychological and chemical hazards in the workplace have been implicated as reproductive risks. Work involving plastic, lead, radiation, and antineoplastic drugs, anesthetic agents, solvents and other chemicals, and infectious agents present risks, as do job characteristics such as heavy workloads, shifts work and stress. Physical condition of work setting, such as noise, air quality and sitting versus standing on the job, are also among the work conditions that represent potential reproductive risks for women. Women in the electronics, pharmaceuticals and metal industries, clerical workers, laundry workers, nurses, physicians and other health care workers are some of the groups on which attention has focused."

In 1994, International Conference on Population and Development was organized by United Nations in Cairo to address the emerging issues in the world. Almost all governments recognized the need to advocate the reproductive rights for all men and women to be informed and to have an access to safe, effective, affordable, legal and acceptable methods of family planning of their choice. Conference also defines the concept of safe motherhood as, "Services based on the concept of informed choice, should include education in safe motherhood, prenatal care, maternal nutrition, adequate delivery assistance, referral services for pregnancy, child birth and abortions complications, post-natal care and family planning. All births should be assisted by trained persons (Sultana, 2008)."

Research into occupational exposure and effects on reproductive systems have made important scientific contributions in the past few decades. Early studies focused on possible effects on the fetus rather than the reproductive health of the woman. Later, it was realized

that reproductive toxins may also induce hormonal alterations affecting other aspects of reproductive health such as menstrual cycle, ovulation and fertility. Attention is now shifting from concern for the pregnant woman and the fetus, to the entire spectrum of occupational health hazards among women and reproductive health of both genders (Laskin et al., 2007). While on other side Selevan et al. (2003) have mentioned that "The changing nature of the work and the work environment and the emerging technologies in reproductive biology and exposure assessment are leading us to rethink approaches to studying exposures and traditional reproductive health outcomes. It remains important to emphasize that the spectrum of reproductive health outcomes includes not only women childbearing potential but also all working women, all working men and all of their potential off spring. Clinical outcomes among workers should include sexual dysfunction, infertility, pregnancy loss, male: female sex ratios of pregnancies, aberrations (for example early menopause and andropause), and reproductive organ and endocrine-mediated neoplasm's." In Pakistan the situations for the working women are stressful men seclude them form the job sector and manipulate them by harassment and like activities. In addition to this there are also some issues like stress and encumber which directly influence the reproductive health of the women. In academic institutions like UoG, women are overburdened and having lengthy hours. Due to these issues it affects the reproductive health of the women.

OBJECTIVES OF THE STUDY

1. To analyze the socio-economic characteristics of the respondents.
2. To find out the occupational risk factors of working women.
3. To find out the level of reproductive health of married women.
4. To find out the association of occupational risk factors and the reproductive health of working women.

MATERIALS AND METHODS

For present study 110 working women from University of Gujrat were selected through simple random sampling. Sampling frame was available and following formula (Yamane, 1967) was used to determine the appropriate sample size for the present study.

$$n = \frac{\mathrm{N}}{1 + \mathrm{N(e)2}}$$

$$n = \frac{152}{1 + 152(0.05)2}$$

$$n = 110$$

A well structured questionnaire was administered by researchers which contained different parts like a) socio-economic characteristics of the respondents b) occupational risk factors of working married women and c) reproductive health of working women. Further, the data was analyzed by using Statistical Package for Social Sciences (SPSS) version 16.0. Percentages and statistical test (Kendall's tau-b & c) was used to draw conclusions and test the hypothesis.

RESULTS AND DISCUSSION

Table 1.1 reveals the age of the respondents. The data reveals that about 10.00 percent of the respondents were belonging to age group of 26-30 years, 30.90 percent of the respondents were

belonging to age group of 31-35 years, 33.63 percent of the respondents were belonging to age group of 36-40, 10.90 percent of the respondents were belonging to 41-45 years, 8.18 percent of the respondents were belonging to age group of 46-50 years, while only 6.36 percents of the respondents were belonging to age group of 51 & above years.

Table 1.2 depicted the family members of the respondents. According to the table majority of the respondents i.e. 65.45 percent had 4-6 family members. Education is one of the most important factors the influence the patterns of individuals directly or indirectly. It is proven by various researchers that educated person adopt innovation in the required field more easily as compared to an illiterate person. Table 3 indicated the educational attainment of the respondent. According to table No. 1.3, 80.0 percent respondents had masters and above. The main reason behind higher levels of the education of the respondents is that the entrance requirements in such organizations are higher qualification. Table 1.4 showed the family income of the respondents. According to the table 98.2 percent respondent's family income was 25001 and above, while only 1.8 percent respondent's family income was below 25000.

Table 1.5 reflected the age of the respondents at marriage. According to the table 33.64 percent of the respondents belonged to the age group of 26-30 years at the time of their marriage, 23.64 percent of the respondents belonged to the age group of 31-35 at the time of their marriage, 27.27 percent of the respondents belonged to the age group of 21-25 at the time of their marriage, 9.09 percent had age group of 16-20, while only 6.36 percent of the respondents belonged to the age group of 36 & above. Family is the group of intimate peoples emotionally related either by blood, marriage, responsible for the reproduction and rearing of children, living together. It found in all societies that unite people in cooperative groups to oversee the bearing and raising of children (Macionis, 2006). For the present study there were found three types of families.

Table 1.6 indicated the family structure of the respondents. According to the table majority i.e. 49.1 percent of the respondents were living in nuclear family system, while 45.5 percent respondents were living in joint family system and only 5.5 percent of the respondents were living in extended family system. Table showed that majority i.e. 49.1 percent of the respondents were living in nuclear family system because of rapid increase of change in living patterns and demands of the individuals. Table 1.7 showed the living status of the respondents. According to the table majority of the respondents i.e. 70.0 percent were living with their husband, while 18.2 percent respondents were living in University Residences and only 11.8 percent respondents were living with their parents.

Table 2.1 reflected the age of respondents at the time of first pregnancy. According to the table 28.18 percent belonged to 25-29 age group at the time of first pregnancy, 25.45 percent of the respondents belonged to the age group of 30-34 age group, 18.18 percent of the respondents belonged to the age group of 35 & above, while 10.91 percent of the respondents had no pregnancy. Table 2.2 showed the health facilities provided by the University of Gujrat. According to this table 70.0 percent respondents were to some extent agree about the health facilities of the university and 7.3 percent of the respondents to great extent and 22.7 percent of the respondents were not at all agree about the health facilities of Gujrat University. It was concluded that majority of the respondents were to some extent agree about the conduciveness of health facilities for working women. Paul (1993) the ergonomic factors, including poor workplace design, tend to affect female reproductive outcomes, due to the physical and physiological changes that occur during pregnancy. A woman's ability to work while pregnant will vary depending on her own individual characteristics and the nature of tasks. Women can continue to perform most tasks during pregnancy, some tasks such as standing and heavy lifting may no longer b advisable. The impact of ergonomic stressors will vary considerably depending on

the individual woman's physical fitness and strength, as well as her overall health status. An abortion is the termination of a pregnancy by the removal or expulsion from the uterus of fetus/ embryo, resulting in or caused by its death. Table 2.3 showed the abortion of pregnancy. According to data, 54.5 percent of the respondents did not abort any pregnancy during job, while 45.5 percent of the respondents aborted their pregnancy during job.

Table 1: Socio-economic Characteristics of the Respondents

1.1 Age of the Respondents			1.5 Age of the Respondents at Marriage		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
26-30	11	10.00	16-20	10	9.09
31-35	34	30.90	21-25	30	27.27
36-40	37	33.63	26-30	37	33.64
41-45	12	10.90	31-35	26	23.64
46-50	9	8.18	36 & above	7	6.36
51 & above	7	6.36	Total	110	100.00
Total	110	100.0			
1.2 Family Members of the Respondents			1.6 Family Structure of the Respondents		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
Up to 3	16	14.54	Nuclear	54	49.1
4-6	72	65.45	Joint	50	45.5
7-9	15	13.64	Extended	6	5.5
10 & above	7	6.36	Total	110	100.0
Total	110	100.00			
1.3 Educational Status of the Respondents			1.7 Respondents Living Status with (Residence)		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
Metric	1	.9	Husband	77	70.0
Intermediate	9	8.2	Parents	13	11.8
Graduation	12	10.9	University	20	18.2
Masters and above	88	80.0	Total	110	100.0
Total	110	100.0			
1.4 Family Income of the Respondents					
Categories	Frequency	Percentage			
Up to 25000	2	1.8			
25001 +	108	98.2			
Total	110	100.0			

Table 2 Occupational Risk Factors Associated with Reproductive Health

2.1 Age of the Respondents at first Pregnancy			2.5 Occupational Stress		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
No pregnancy	12	10.91	To Great Extent	71	64.5
Up to 24	20	18.18	To Some Extent	32	29.1
25-29	31	28.18	Not At All	7	6.4
30-34	28	25.45	Total	110	100.0
35 & above	19	17.27			
Total	110	100.00			
2.2 Health Facilities Provided by University			2.6 Stressful Work		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
Not At All	25	22.7	To Great Extent	63	57.3
To Some Extant	77	70.0	To Some Extent	29	26.4
To Great Extant	8	7.3	Not At All	18	16.4
Total	110	100.0	Total	110	100.0
2.3 Abort Pregnancy			2.7 Job Dissatisfaction		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
No	60	54.5	No	39	35.5
Yes	50	45.5	Yes	71	64.5
Total	110	100.0	Total	110	100.0
2.4 Abortion because of Occupational Stress			2.8 Reproductive Complications During Job		
Categories	Frequency	Percentage	Categories	Frequency	Percentage
No	34	30.9	No	22	20.0
Yes	76	69.1	Yes	88	80.0
Total	110	100.0	Total	110	100.0

Table 2.4 showed the reason of abortion. Majority of the respondents i.e. 69.1 percents respondents aborted their pregnancy due to occupational stress, while 30.9 percent of the respondents did not abort their pregnancy due to occupational stress. It was concluded that one of the main reason of the abortion of the respondents was occupational stress. Chistiani (1995) conducted a study on occupational stress and dysmenorrheal in women working in cotton textile mills. This study stated that although physical activity itself may not be considered a proven risk factor for pregnancy, some physically strenuous work conditions (e.g. heavy lifting, frequent bending) might increase the risk of negative pregnancy outcome, especially among women with other risk factors (e.g. with previous fetal

losses) or in the presence of other work-related risks. The mechanism of action of strenuous physical activity on fetus is not clear, and it might involve decrease not only in oxygen and nutrient supply but also in the endocrine system. This hypothesis is advanced by a recent prospective study which found that the time window of exposure to physical strain occurs.

Table 2.5 showed occupational stress of the respondents. According to this table 64.5 percent respondents were to great extent agree about the occupational stress and 29.1 percent respondents to some extent and only 6.4 percent respondents were not at all agree about the occupational stress for employees. It was concluded that majority of the respondents were to great extent agree about the occupational stress during job. Paul (1993) stated that the degree of stress on the spine caused by lifting is directly related to the distance from the body that the load is shifted, with greater distance causing greater stress. As the abdomen increase in size, pregnant women must bend over more and reach out further to pick up a load. The amount of stress on the lower back is greater in pregnancy because in the increase size of abdomen. As the pregnant woman's centre of balanced shifts, she may find it more difficult to carry awkward loads.

According to the (Schetter et al., 2000) it is estimated that "Preventing Stress at Work" have indicated that stress affects working women more than men. Several factors seem to magnify the impact of stress on women, such as the fact that women are often less paid than men; and many organizations lack policies that allow for family responsibilities and which account for stress at work, high job demands and low worker control over the job and work organization. Teachers and nurses who have responsibilities for the health, welfare and well-being of others, have been identified as being particularly at risk of stress. Table 2.6 indicated the stressful work for the respondents. According to this table 57.3 percent respondents were to great extent agree about the stressful work and 26.4 percent respondents to some extent and only 16.4 percent respondents were not at all agree about the stressful work for employees. It was concluded that majority of the respondents were to great extent agree about the stressful work. Table 2.7 described the satisfaction of the respondents with their jobs. It showed that 64.5 percent of the respondents were not satisfied with their jobs, while 35.5 percent respondents satisfied with their job.

Table 2.8 reflected the reproductive complications of female during job. According to the table 80.0 percent of the respondents faced reproductive complications during job, while only 20.0 of the respondents were not facing any reproductive complications during job.

Table No.3 Occupational Risk Factors and Reproductive Health of Female Faculty Members

Reproductive Health	**Occupational Risk Factors**			Total
	Low	Medium	High	
Low	1 (0.90%)	9(8.18%)	0(00.0%)	10(09.09%)
Medium	7(6.36%)	55(50.0%)	11(10.0%)	73(66.36%)
High	1(0.90%)	19(17.27%)	7(6.36%)	27(24.55%)
Total	9(8.18%)	83(75.45%)	18(16.36%)	110(100.0%)

Table 3 presented the trend of data. According to this table there was association between occupational risk factors of working women in Gujrat University and their reproductive health. According to data presented in cross tabulation 16.36% respondents had high, 75.45% had medium and 8.18% had low level of occupational risk factors and on the other hand 24.55% had high, 66.36% had medium and only 9.09% had low reproductive health status while working in University of Gujrat.

Table No.4 Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.	Exact Sig.
Ordinal by Ordinal	Kendall's tau-b	.177	.079	2.139	.032	.048
	Kendall's tau-c	.118	.055	2.139	.032	.048
N of Valid Cases		110				

Table 4 showed the statistical test that was used to check the association of independent and independent variable. Kendall's tau-b & c test was used. Calculated value (P value: 0.032) was less than 0.05 level of significance. Therefore it showed that there was association between occupational risk factors and reproductive health of married working women in University of Gujrat.

CONCLUSION

This study outlines the situation of women workers regarding occupational health. It presents overwhelming evidence that woman workers suffer from inaccurate statistics, inadequate health care, legislation and policy that could have protected them from adverse working conditions and environment in view of their reproductive role. Our knowledge how occupational exposures affect the reproductive health of woman is not always conclusive. The data analysis presented in the table has shown that there is adverse situation of the working women in case of the physical and mental health. Further there is a need to improve the workplace situations for the married women as such adverse conditions of overburdened have made their life more difficult. There are number of problems these women are facing such as exposures to irregular work, work load, heavy physical work and other work risks such as exposure to psychosocial stress and occupational stress.

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