

# OCCUPATIONAL REPRODUCTIVE HEALTH RISK FACTORS ASSOCIATED WITH WORKING WOMEN IN CITY FAISALABAD

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## ABSTRACT

**Background:** Female health is an on growing challenge in developed as well as less developed countries. Since last few decades there has been quite an improvement of female representation in job sector in Pakistan. This change has led to numerous problems, mainly the health of working female and least support by the employers. In the current study we investigated health of working women. **Objective:** Our main objectives of this study were to identify socio-economic characteristics of respondents, type of occupational factors, investigate the problems and impact of the occupational risk factors on the reproductive health. **Study design:** Descriptive inferential study. **Setting:** We recruited the n=200 participants in this study from the industrial capital of Pakistan, district Faisalabad. **Period:** Jan 2018 to Dec 2018. **Material & Methods:** Questionnaire based survey has been used to collect the data. All of the statistical analyses were performed SPSS version 16. **Results:** Out of 200 study participants, 46.5% were belonging to age group of 36-45years, 40.5% were illiterate and 50.5% of respondent's husbands were labor. Our results indicated that females are facing social, psychological and physical health problems. Among the physical health problem we found that numerous females have been through the devastating outcomes such as miscarriages, damage menstrual cycle, unconceivable or unstable pregnancy, premature birth, uterine contraction, leukemia and effect on fetus. **Conclusion:** Our results indicate that we need to revise the policies regarding working environment such as exposure to chemicals, radiation, biological agents. Furthermore, in order to address the emerging psychological distress, it is recommended to renegotiate with the employers on work conditions, health benefits and child care.

**Key Words:** Occupational women: garments; Faisalabad, reproductive health knowledge

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## INTRODUCTION

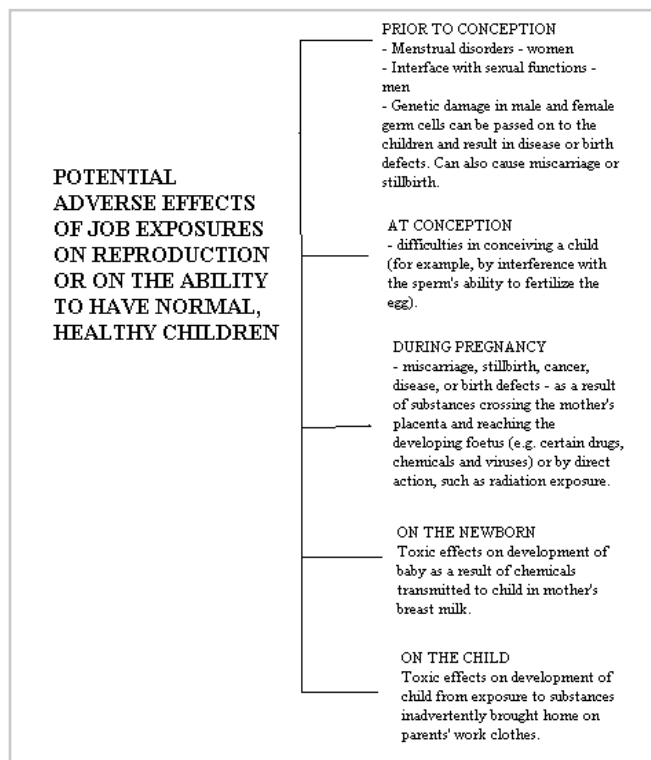
Occupational diseases (ODs) are not a new risk to social security. In fact, ODs are covered by many systems throughout the world for several decades. Thousands of harmful chemicals are produced and used in a broad range of workplaces throughout the world. The exposure of these harmful chemicals can have serious side effects on the reproductive health of both female and male industrial workers. These harmful chemical include a variety of biological and chemical agents (e.g. bacteria, viruses, radiation). Furthermore, different other work

situations such as shift work or highly stressful work can also affect the fertility of female workers.<sup>1,2</sup> There is a worldwide trend of more women entering the industry to join workforce. The ratio of females working outside the home for earning is also increasing globally in developing countries. Due to this, proportion of women's occupational injury and disease claims in workers compensation systems is also rising to a significant number.<sup>3,4</sup> and according to a report 11 million occupational diseases and 800000 worked-related deaths annually are happening. Already there is global burden of hundred million

occupational injuries.<sup>5</sup> Giving these overwhelming statistical facts, the new emerging female occupational related reproductive health issues needs to be identified and diagnosed urgently.

Observations on reproductive factors have led to the hypothesis that excessive production of progesterone and estrogen hormones are the main cause of females' breast cancer, infertility, polycystic ovarian syndrome (PCOS), endometriosis etc. Environmental risk factors are also the main cause of above stated diseases. Exposure to ionizing radiation (X-rays, Gamma rays) has been evidently linked with a high peril of breast cancer.<sup>6</sup> Alcohol consumption, dietary fat and persistent organ chlorine substances at different workplaces are the other environmental factors that have been studied recently are also linked to affect female reproductive health.<sup>7</sup>

**Reproductive Hazards to woman:**



In previous occupational studies general examination of different solvents were studied but their specificity and exposure level was not

examined in detail.<sup>8,9</sup> In Later studies detailed chemical nature of solvents compounds and their harmful exposure to female workers was examined. According to this women who were exposed to dry cleaners chemical (tetrachloroethylene) and other various chemical used in different industries and their exposure to environment e.g. toluene, aliphatic hydrocarbons showed statistically high **risk** of spontaneous abortion or miscarriages due to their neurotoxic effects.<sup>10,11</sup> In the employment patters of women there have been spectacular changes during the last few decades, but it has some serious side effects as well like emotional disturbances due to hormonal changes, infertility, cervical and breast cancers due to long shift hours, stressful work, exposure to harmful chemicals at workplace, fatigue and lack of rest due to work.<sup>12</sup> A comprehensive examination of all the factors effecting women reproductive health at work is required in order to prevent cancer and other infertility diseases.<sup>13,14</sup> In a study it has been found that an Occupational exposure among European non smoking females was main cause of sizable fraction of lung cancer.<sup>15</sup>

**Chemicals that Affect Reproductive Health**

The hazardous chemicals that cause cancer, reproductive impairment in women utilized by different industries and present in environment (Heavy metals, Agricultural chemicals such as pesticide) at workplaces are mentioned below.<sup>16</sup>

- Organic solvents, Poly-halogenated biphenyl
- Inorganic and complex organic Anesthetic agents, Epichlorohydrin (used in making glycerin and plastic)
- Ethylene Di-bromide (pesticide)
- Ethylene oxide (used in making polyester fibers, sterilizing agent, disinfecting agent and fumigant)
- Vinyl halides, Some hormones (The hormones controlling the female reproductive system all of which are produced in the brain, include follicle-stimulating hormone (FSH) gonadotropin-releasing hormone (GnRH), and leutenizing

hormone (LH), oestrogen and progesterone produced by the ovaries and the corpus luteum; and human chorionic gonadotropin (HCG)

Risk category	Examples
Chemical	Lead Solvents
Biological	German measles Toxoplasmosis
Ergonomic	Heavy lifting Standing
Physical	Excessive noise Heat
Lifestyle	Smoking Alcohol Consumption
Schedule	Rotating shifts Long work hours

**MATERIAL AND METHODS:**

A system of principles, practices and procedures applied to a specific branch of knowledge is called methodology. Sample of 200 working female were selected through simple random sampling technique in the different factories of City Faisalabad and close ended questions were prepared in the light of researchers objectives. Descriptive and inferential statistics were used to analyze the data through SPSS version 16.

**RESULTS**

Using frequency based computation we looked into the main socio-economic attributes of data mainly age, sex, marital status and education.<sup>17</sup> This led to classify the participants of study into various socio-economic classes. In medical and social studies such classification approach in turn can help in explaining the attitude and behavior of participants.<sup>18</sup> We grouped the study participant into various intervals of age, classes of education and occupation of spouses.

**Table: 1 socioeconomic features in terms of age, education and spouse occupation**

	Frequency	Percentage (%)
<b>Age Group(in years)</b>		
15-25	30	15.0
26-35	93	46.5
36-45	55	27.5
46+	22	11.0
<b>Education Group</b>		
Illiterate	81	40.5
Primary-middle	46	23.0
Matric-intermediate	28	14.0
Bachelor & above	15	7.5

**Husband's occupation**

Businessman	7	3.5
Public sector job	29	14.5
Labor	101	50.5
Unemployed	63	31.5

Table 1 explains that **socioeconomic features in terms of age** (15%, 46.5%, 27.5% and 11% of the respondents were belonging to age groups of 15-25, 26-35, 36-45 and 46 and above years respectively), **education**(40.5%, 23.0%, 14.0% and 7.5% of the respondents were illiterate, primary- middle passed, matriculation-intermediate and graduation and above respectively), **spouse occupation** (3.5 %, 14.5%, 50.5%, and 31.5% of the females husband were businessman, doing jobs in public sector, laborers and jobless respectively). According to Economic Survey of Pakistan (2007-08) it is measured that at national level the occupational employment trends are 7.0% males are earning and managing their daily expenses by construction, 13.5% by manufacturing, 13.9% are busy in community, social and personal services, 17.5% are related to wholesale & retail trade business and 38.4% earning their bread from agriculture, while the remaining employed labor force have the other occupations like transport, storage and communication, and others.

**Table: 2 Distribution of the respondents according to the their reproductive health complication after joins their job**

	Frequency	Percentage
<b>Socio-Psycho Problems</b>		
Psychosomatic disorder	36	18.0
Organizational condition	34	17.0
Insecurity	61	30.5
Sexual abuse	10	5.0
Job dis-satisfaction	59	29.5
<b>Physical problems</b>		
Numbness/swelling	54	27.0
Weight gain	27	13.5
Shoulder pain	39	19.5
Backache	43	21.5
Eyes problems	35	17.5
<b>Negative outcomes on reproductive health (frequency [percentage])</b>		
Outcomes	Yes	No



Miscarriage	90[45.0%]	110 [55.0%]
Damage menstrual cycle	35[17.5%]	165 [82.5%]
Unconceivable of pregnancy	65 [32.5%]	135 [67.5%]
Premature Birth	78 [39.0%]	122 [61.0%]
Uterine Contraction	125[62.5%]	75 [37.5%]
Leukemia	80 [40.0%]	120 [60.0%]
Effect on fetus	62 [31.0%]	138 [69.0%]

According to the data results of table number 2 the major socio psycho problems are psychosomatic disorder (18%), organizational condition (17%), insecurity at workplace (30.5%), sexual abuse (5%) and job dis-satisfaction (29.5%). This table data also explains the major physical problems that women face at their workplace majorly are numbness /swelling of feets (27%), weight gain (13.5%), shoulder pain (19.5%), backache (21.5%), eyes problems (17.5%)

Table 2 also reveals the negative outcomes on reproductive health mainly are miscarriage (45%), disturbance in menstrual cycle (17.5%), premature birth (39%), uterine contraction during pregnancy (62.5%), leukemia (40%) and problem in fetus (31%).

**Table 3: Association between age of the respondents and their knowledge about their work situation can damage their reproductive health**

Age of the respondents	Knowledge about reproductive complications		Total
	Yes	No	
15-25	18	12	30
	60.0%	40.0%	
26-35	51	42	93
	54.8%	45.2%	
36-45	24	31	55
	43.6%	56.4%	
46 and above	3	19	22
	13.6%	86.4%	
Total	96	104	200
	48.0%	52.0%	

Chi-square = 14.30      Significance = .003 \*\*  
Gamma = -.336

**Table 4: Association between education of the respondents and their knowledge about their work situation can damage their reproductive health**

Education of the respondents	Knowledge about reproductive complications		Total
	Yes	No	
Illiterate	15	66	81
	18.5%	81.5%	
Middle	26	20	46
	56.5%	43.5%	
Secondary	10	18	28
	35.7%	64.3%	
B.A/B.SC	6	-	6
	100.0%	-	
M.A/M.SC	9	-	9
	100.0%	-	
Total	96	104	200
	48.0%	52.0%	

**Table 5: Association between received any kind of medical treatment and face any abortion**

Receive any kind of medical treatment in case of injury during working hours	Abort any pregnancy		Total
	Yes	No	
Yes	59	50	109
	54.1%	45.9%	
No	30	60	90
	33.3%	66.7%	
Total	89	110	199
	44.7%	55.3%	

Chi-square = 79.98 Significance = .00 \*\*  
Gamma = .750

Chi-square = 8.62 Significance = .003 \*\*  
Gamma = .405

**DISCUSSION**

There is a highly significant (P = .003) association between age of the respondents and their knowledge about their work situation can damage their reproductive health according to the chi-square value 14.30 (Table 3). There is a strong negative relationship between the variables as per gamma value. Data indicate that majority (60.0%) of the low age (15-25) respondents had knowledge about their work situation can damage their reproductive health. So the hypothesis “Lower the age of the respondents, higher will be the knowledge about their work situation can damage their reproductive health” is accepted.<sup>19</sup> The chi-square value 79.98 (Table 4) clearly indicates a significant (P = .00) association b/w respondents education and their knowledge about their work situation can be a cause of serious damage to their

reproductive health/fertility. A strong positive relationship between the variables is observed according to the data gamma values reveals. So the hypothesis "Higher the education of the respondents, higher will be the knowledge about their work situation can damage their reproductive health" is accepted. The chi-square value (8.62) of table 5 shows a highly significant ( $P = .003$ ) association between abortion and medical treatment. The gamma value shows a positive relationship between the variables. So the hypothesis "If the respondents received medical treatment than they had no abortion" is accepted.

## CONCLUSION

Main purpose of this research project was the analysis and investigation of risk factors associated with fertility and reproductive health of working women in different fields.

The idea is to find out perception of occupational women regarding different factors that affect their reproductive health. Following recommendations are suggested to improve the occupational environment in the light of this research analysis. For protection and good fertile health of female workers, stressful work conditions, exposure to radiations, hazardous chemicals and various harmful biological agents should be eliminated or at least reduced as much as possible.<sup>20</sup> It is the duty of government officials to make law and takes a number of actions for protection of workers reproductive health

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AUTHORSHIP AND CONTRIBUTION DECLARATION			
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3	Zahra Batool	Supervised the whole article	
4	Night Yasmeen	Data analysis, proof reading	