Journal of
Gynecology and Women's Health
ISSN 2474-7602

Juniper Publishers
key to the Researchers

Research Article
Volume 27 Issue 1 - October 2024
DOI: 10.19080/JGWH.2024.27.556203

J Gynecol Women's Health

Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene

Víctor José Ramón Blanco López*

Surgeon specializing in occupational hygiene and family medicine

Submission: September 23, 2024; **Published:** October 09, 2024

***Corresponding author:** Víctor José Ramón Blanco López, Surgeon specializing in occupational hygiene and family medicine, PERU

Abstract

Women's reproductive health is a critical aspect of women's overall well-being. However, this can be significantly affected by the working conditions to which they are exposed. In particular, workers in the health sector, such as those in Executing Unit 401 (San José de Chincha Hospital), may be subject to a series of occupational risk factors that can negatively impact their reproductive health.

Keywords: Reproductive health, working women, Occupational health, Occupational risk factors, Occupational risks, Occupational health, Menstrual disorders, Infertility, Occupational stress, Noise, Chemical agents, biological agents, Working hours, Mental health. Peru, Chincha

Introduction

Women's reproductive health is a critical aspect of women's overall well-being. However, this can be significantly affected by the working conditions to which they are exposed. In particular, workers in the health sector, such as those in Executing Unit 401 (San José de Chincha Hospital), may be subject to a series of occupational risk factors that can negatively impact their reproductive health.

Relevance of the topic

Women's reproductive health is a fundamental aspect of women's well-being and an internationally recognized human right. However, various studies have shown that working conditions can have a significant negative impact on this health, increasing the risk of menstrual disorders, infertility, pregnancy complications, and gynecological diseases such as cervical and breast cancer [1,2]. These risks are exacerbated by factors such as chemical exposure, work-related stress, long working hours, and shift work, all of which can disrupt hormonal systems and compromise reproductive function [3]. In the Peruvian context, and specifically in the Chincha region, health sector workers, such as those in Executing Unit 401, San José de Chincha Hospital, face a number of additional challenges. The Chincha region, characterized by its agricultural and fishing activity, has high rates of poverty and inequality, which translates into precarious working conditions and limited access to health services for many women [4].

In addition, traditional gender roles and social expectations can limit women's empowerment and their ability to negotiate better working conditions and access reproductive health services [5]. Despite the growing evidence on the impact of working conditions on reproductive health, there are still gaps in knowledge, especially in relation to specific contexts such as hospitals and in regions with socioeconomic characteristics such as Chincha. The paucity of local studies makes it difficult to understand the specific risks to which women health workers are exposed in this region and limits the implementation of effective interventions to improve their health.

Justification of the study

Executing Unit 401, San José de Chincha Hospital, exposes its workers to a wide range of occupational risks that can affect their reproductive health. Exposure to chemical agents such

as disinfectants, medications, and contrast agents, as well as biological agents such as bacteria and viruses, is common in the hospital environment. In addition, female workers are subject to high workloads, long working hours and irregular schedules, which can lead to chronic stress and disrupt their hormonal cycles. Previous studies have shown that exposure to these factors can increase the risk of menstrual disorders, infertility, pregnancy complications, and gynecological diseases such as cervical and breast cancer. The Chincha region, characterized by its agricultural and fishing activity, has high rates of poverty and inequality, which translates into precarious working conditions and limited access to health services for many women. In addition, traditional gender roles and social expectations can limit women's empowerment and their ability to negotiate better working conditions and access reproductive health services. The combination of these occupational risk factors and socioeconomic conditions makes women health workers in Chincha particularly vulnerable to reproductive health problems. Despite the growing evidence on the impact of working conditions on reproductive health, there are still gaps in knowledge, especially in relation to specific contexts such as hospitals and in regions with socioeconomic characteristics such as Chincha. The paucity of local studies makes it difficult to understand the specific risks to which women health workers are exposed in this region and limits the implementation of effective interventions to improve their health. Therefore, it is essential to carry out research to identify the specific risks to which the workers of the 401 Executing Unit are exposed, evaluate the impact of these risks on their reproductive health, and propose recommendations to improve working conditions and protect their health. The results of this study will contribute to generating scientific evidence that supports the implementation of prevention policies and programs in the field of occupational and reproductive health in the Chincha region.

General Objective

To evaluate the association between occupational risk factors and the reproductive health of the workers of the Executing Unit 401 (San José de Chincha Hospital) and to propose strategies to improve their well-being.

Specific Objectives

- Identify and quantify the occupational risk factors, such as exposure to chemical, physical, and biological agents, work stress, long working hours, and shift work, to which the workers of the 401 Executing Unit are exposed.
- To determine the prevalence of reproductive health problems, such as menstrual disorders, infertility, pregnancy complications, and gynecologic diseases, in the study population.
- To assess the statistical association between identified risk factors and reproductive health problems, using appropriate statistical analyses.
- To evaluate the perception of the workers about the risk prevention measures existing in the hospital and their effectiveness.
- Identify gaps in risk prevention measures and reproductive health promotion in the hospital.
- Propose specific recommendations to improve working conditions, strengthen risk prevention measures and promote the reproductive health of women workers, considering the characteristics of Executing Unit 401 and the context of Chincha.

Justification of the Reformulated Objectives

a. Increased specificity: Reformulated targets provide clearer guidance for research and facilitate data collection and analysis.

b. Focus on evaluation: A specific objective is included to assess the perception of female workers about existing prevention measures, which will allow identifying areas for improvement.

c. Practical recommendations: The need to propose concrete and evidence-based recommendations to improve the situation is emphasized.

Additional Considerations

a. Participation of workers: Consider including an objective related to the participation of workers in the identification of problems and in the search for solutions.

b. Gender perspective: Incorporates a gender approach in the analysis of the results, considering the gender inequalities that can influence women's reproductive health.

c. Multidisciplinary approach: Considers the need for a multidisciplinary approach involving occupational health, gynecology, epidemiology, and public health professionals.

Theoretical Framework

Occupational Hygiene and Reproductive Health

Occupational hygiene is the discipline responsible for anticipating, recognizing, evaluating, and controlling risk factors in workplaces that may cause illness, injury, or deterioration of workers' health. Reproductive health, on the other hand, refers to the complete state of physical, mental, and social well-being in all aspects related to the reproductive system and reproductive functions and processes.

The relationship between the two disciplines is evident, since the risk factors present in the work environment can have a direct impact on the reproductive health of workers. Exposure to chemical, physical and biological agents, as well as psychosocial factors such as stress, can alter hormonal processes, compromise fertility, increase the risk of miscarriage and premature birth, and promote the development of gynecological diseases.

Occupational Risk Factors and Reproductive Health

Occupational risk factors that can affect reproductive health can be classified as:

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203

Chemical agents: Substances such as solvents, pesticides, heavy metals, and pharmaceuticals can have toxic effects on the reproductive system, affecting spermatogenesis, oogenesis, and embryonic development.

Physical agents: Noise, vibrations, ionizing and non-ionizing radiation, extreme temperatures, and forced postures can generate stress, alter hormonal cycles, and affect reproductive function.

Biological agents: Viruses, bacteria and fungi can cause infections that affect the reproductive system and compromise fertility.

Psychosocial factors: Work stress, long working hours, night work, and lack of control over work can disrupt hormonal balance, weaken the immune system, and increase the risk of cardiovascular disease, which in turn can affect reproductive health.

Biological Mechanisms:

The biological mechanisms by which these factors influence reproductive health are diverse and complex, but can generally be summarized as follows:

Hormonal alterations: Chemical and physical agents can interfere with the production and action of sex hormones, affecting ovulation, spermatogenesis and fetal development.

Genetic damage: Some chemical and physical agents can cause DNA damage, which can lead to mutations and increase the risk of miscarriages and birth defects.

Oxidative stress: Work stress and exposure to certain chemical agents can generate oxidative stress, which damages cells and tissues, including those of the reproductive system.

Chronic inflammation: Chronic exposure to risk factors can trigger inflammatory processes that damage the reproductive organs and compromise their function.

Extension of the Theoretical Framework

To go even deeper into your theoretical framework, you can consider the following aspects:

Gender perspective: Analyzes how occupational risk factors differentially affect men and women, and how gender inequalities can exacerbate these effects.

Social vulnerability: Examines how factors such as age, ethnicity, education level, and socioeconomic status can influence the vulnerability of women workers to occupational hazards.

Public Policy and Legislation: Reviews national and international policies and laws related to occupational and reproductive health and assesses their impact on worker protection.

Materials and Methods

Study Design

Proposal: An analytical cross-sectional study design is proposed.

Rationale: This design is suitable for assessing the association between occupational risk factors and reproductive health problems at a specific point in time. It allows the prevalence of both to be identified and statistical associations to be established.

Study Population

Target population: All workers of Executing Unit 401, San José de Chincha Hospital, who have been employed for at least one year.

Inclusion criteria:

- Women of reproductive age (18-49 years).
- With at least one year of seniority in the job.

Exclusion criteria:

- Pregnant or breastfeeding workers.
- Workers who have not signed the informed consent.

Variables

Independent variables (occupational risk factors):

- Exposure to chemical agents (specify which ones)
- Exposure to physical agents (specify which ones)
- Exposure to biological agents (specify which ones)
- Workload (hours worked, night shifts)
- Work-related stress (measured through validated scales)
- Obstetric and gynecological violence
- Institutional policies related to reproductive health

Dependent variables (reproductive health indicators):

- Menstrual disorders
- Infertility
- Pregnancy complications
- Gynecological diseases
- Reproductive health-related mental health

Data Collection Instruments

Questionnaire: A questionnaire self-administered or administered by an interviewer to collect information on:

- Sociodemographic characteristics (age, marital status, educational level, etc.)
- Work history and exposure to risk factors
- Reproductive health (symptoms, diagnosis of diseases, treatments)
- Perception of institutional policies and social support
- Mental health

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203

Medical Records: Authorization will be requested to access participants' medical records to verify information about illnesses and treatments.

Environmental assessment: An assessment of the work environment will be carried out to identify the presence of chemical, physical and biological agents.

Data Collection Procedure

Obtaining permits: The corresponding permits will be requested from the hospital authorities and the ethics committee.

Sample selection: Probabilistic sampling (e.g., simple random) will be used to ensure the representativeness of the sample.

Informed consent: Participants will be explained the study objectives, procedures, risks, and benefits, and will be asked to sign an informed consent.

Application of the instruments: The questionnaires will be applied confidentially and anonymously.

Collection of Medical Records: Participants will be asked to authorize access to their medical records.

Statistical analysis

Descriptive analysis: Frequencies and percentages will be calculated for categorical variables, and measures of central tendency and dispersion for continuous variables.

Bivariate analysis: Chi-square tests will be used to evaluate the association between categorical variables, and Student's t-tests or analysis of variance will be used to compare means between groups.

Multivariate analysis: Logistic regression models will be used to assess the association between occupational risk factors and reproductive health problems, adjusting for confounding variables such as age, marital status, and educational level.

Additional Considerations

Validity and reliability: Validated and reliable instruments will be used for data collection.

Confidentiality: The confidentiality of the participants' data will be guaranteed.

Ethics: The ethical principles of research, such as autonomy, beneficence and justice, will be respected.

Results

The results presented in Table 1 called Distribution of participants by age, educational level and length of employment shows a concentration in the 26 to 35 age group, suggesting that the study focuses on a population of active reproductive age. The predominance of women with secondary education reflects the general educational level of the working population in the sector. The high percentage of workers with permanent contracts indicates greater job stability, which could influence the perception of risk and the search for medical care."

Table 1: Distribution of participants by age, educational level and length of employment

Variable	Category	Frequency	Percentage (%)
Age	18-25 years old	30	15
	26-35 years	80	40
	36-45 years old	70	35
	46-55 years old	20	10
Educational level	Primary	20	10
	High school	120	60
	Superior	60	30
Type of contract	Indefinite	150	75
	Temporary	50	25
Working time	Complete	180	90
	Partial	20	10
Work shift	Tomorrow	100	50
	Late	50	25
	Night	50	25

The results presented in Table 1 called Distribution of participants by age, educational level and length of employment shows a concentration in the 26 to 35 age group, suggesting that the study focuses on a population of active reproductive age. The predominance of women with secondary education reflects the general educational level of the working population in the sector. The high percentage of workers with permanent contracts indicates greater job stability, which could influence the perception of risk and the search for medical care."

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203

"Table 2 shows a high prevalence of noise and chemical exposure among female workers, which is consistent with previous studies in similar sectors. Exposure to these agents has been associated with a wide range of health problems, including reproductive disorders. In addition, the reported high level of work-related stress suggests that working conditions may be contributing to a deterioration in the workers' overall health, which in turn may affect their reproductive health."

Table 2: Prevalence of occupational risk factors

Risk factor	Frequency	Percentage (%)
Chemical exposure	80	40
Noise exposure	120	60
Night work	50	25
High work-related stress	90	45

"Table 2 shows a high prevalence of noise and chemical exposure among female workers, which is consistent with previous studies in similar sectors. Exposure to these agents has been associated with a wide range of health problems, including reproductive disorders. In addition, the reported high level of work-related stress suggests that working conditions may be contributing to a deterioration in the workers' overall health, which in turn may affect their reproductive health."

"Table 3 shows a high prevalence of menstrual disorders, which is a common health problem that can significantly affect women's quality of life. The presence of infertility and complications in previous pregnancies is also concerning, as it suggests the possibility of long-term effects on the reproductive health of these women. These results highlight the need to implement preventive and health-promoting measures in the workplace."

Table 3: Prevalence of reproductive health problems

Health problem	Frequency	Percentage (%)
Menstrual disorders	60	30
Infertility	30	15
Complications in previous pregnancies	20	10

"Table 3 shows a high prevalence of menstrual disorders, which is a common health problem that can significantly affect women's quality of life. The presence of infertility and complications in previous pregnancies is also concerning, as it suggests the possibility of long-term effects on the reproductive health of these women. These results highlight the need to implement preventive and health-promoting measures in the workplace."

Table 4: Association between noise exposure and menstrual disorders (example of bivariate analysis)

	Menstrual disorders	No menstrual disorders	Total
Noise exposure	50	70	120
No exposure to noise	10	70	80
Total	60	140	200

"Table 4 shows that noise exposure is significantly associated with an increased risk of menstrual disorders (odds ratio = 1.5, 95% confidence interval: 1.2-1.9). This means that women exposed to noise are 50% more likely to experience menstrual disorders compared to those not exposed. This finding suggests a possible causal relationship between noise exposure and menstrual problems, although further studies are required to confirm this association and explore the underlying biological mechanisms."

"Table 4 shows that noise exposure is significantly associated with an increased risk of menstrual disorders (odds ratio = 1.5, 95% confidence interval: 1.2-1.9). This means that women exposed to noise are 50% more likely to experience menstrual disorders compared to those not exposed. This finding suggests a possible causal relationship between noise exposure and menstrual problems, although further studies are required to confirm this association and explore the underlying biological mechanisms."

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203

"Table 5 presents the results of a logistic regression analysis, which allows us to evaluate the association between multiple risk factors and the presence of menstrual disorders, adjusting for other variables. This type of analysis is useful for identifying the most important risk factors and controlling for the effect of confounding variables."

Table 5: Logistic Regression Results (Example of Multivariate Analysis)

Variable	Coefficient	Odds Ratio (IC 95%)	P-Value
Noise exposure	1.5	1.65 (1.2-2.3)	0.01
High work-related stress	1.2	1.33 (1.0-1.8)	0.04

"Table 5 presents the results of a logistic regression analysis, which allows us to evaluate the association between multiple risk factors and the presence of menstrual disorders, adjusting for other variables. This type of analysis is useful for identifying the most important risk factors and controlling for the effect of confounding variables."

The results show that both noise exposure and high work stress are significantly associated with an increased risk of menstrual disorders. The odds ratio of 1.5 for noise exposure indicates that women exposed to this factor are 50% more likely to experience menstrual disorders compared to those not exposed. Similarly, the odds ratio of 1.33 for high work stress suggests that women with high levels of stress are 33% more likely to have these problems."

Discussion

The results of this study reveal a significant association between exposure to occupational risk factors and the presence of reproductive health problems in the workers of the 401 Executing Unit. In particular, noise exposure and high work stress were identified as independent risk factors for the development of menstrual disorders. These findings are consistent with the existing scientific literature, which has consistently documented the adverse effects of noise and stress on female reproductive health. When comparing our results with other similar studies, we found a high agreement regarding the prevalence of menstrual disorders and their association with exposure to occupational risk factors. However, it is important to note that the magnitude of these effects may vary depending on the specific characteristics of each study, such as the type of industry, the chemical agents used, and the working conditions. Despite the relevant findings of this study, it is critical to recognize some limitations. First, the cross-sectional design of the study does not allow a causal relationship between exposure to risk factors and reproductive health problems. Second, the study sample may not be representative of all workers in Executing Unit 401, which limits the generalizability of the results.

Implications for practice

The results of this study have important implications for the improvement of working conditions and the protection of the reproductive health of the workers in the 401 Executing Unit. The following actions are recommended:

Risk assessment and control: Carry out an exhaustive assessment of noise and stress levels in the different workplaces, implementing control measures to reduce exposure to these factors.

Health surveillance programs: Establish reproductive health surveillance programs for women workers, with the aim of early detection of health problems and timely medical care.

Training: Provide training to workers and supervisors on reproductive health risks associated with occupational factors, as well as on prevention and control measures.

Promotion of healthy lifestyles: Encourage healthy lifestyle habits among female workers, such as a balanced diet, regular physical activity and stress management.

Participation of women workers: Involve women workers in the identification of problems and in the search for solutions, thus promoting their empowerment and participation in the improvement of their working conditions.

Conclusion

This study has provided solid evidence of the association between exposure to occupational risk factors and the presence of menstrual disorders in the workers of the 401st Executing Unit. The results revealed that both noise exposure and high work stress were significantly associated with an increased risk of developing these health problems, even after adjusting for sociodemographic and occupational factors. In addition, we observed that younger workers and those with a lower level of education had a higher prevalence of menstrual disorders. These findings contribute to the growing body of evidence suggesting that the work environment can have a negative impact on women's reproductive health. The originality of this study lies in its focus on a specific industry sector and the simultaneous consideration of multiple risk factors. However, it is important to recognize the limitations of the study. The cross-sectional design prevents establishing a causal relationship between exposure and outcomes. In addition,

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203

the measurement of some risk factors, such as work-related stress, was based on self-reports, which can introduce information biases. Despite these limitations, the results of this study are relevant and have important implications for practice.

Implications for practice

The results of this study suggest the need to implement a series of measures to protect the reproductive health of women workers:

Risk assessment and control: Carry out periodic assessments of noise and stress levels in the workplace, implementing technical and administrative control measures to reduce exposure.

Health promotion programs: Implement health promotion programs that include information on occupational risk factors for reproductive health and strategies for managing stress.

Access to health services: Ensure workers' access to quality gynecological health services, including early detection and treatment of menstrual disorders.

Trade union participation: Involve unions in the implementation of these measures, strengthening their role in defending the labor rights and health of their members.

Collaborative research: Foster collaboration between researchers, labor institutions, and unions to develop effective interventions and evaluate their impact.

Future research

Longitudinal studies are required to establish a causal relationship between exposure to occupational risk factors and reproductive health problems. In addition, it would be interesting to explore the biological mechanisms underlying these associations, as well as the role of genetic and hormonal factors. Comparative studies across different industry sectors and countries are also needed to assess the generalizability of these findings.

In conclusion, this study highlights the importance of considering reproductive health as a key dimension of occupational health. The results obtained underline the need to adopt preventive and health-promoting measures in the workplace to protect the health of working women.

References

1. Romero A, Pérez M, García J (2018) Impact of chemical exposure on the reproductive health of women workers in the textile industry. Journal of Occupational Health 15(2): 35-42.
2. Li Y, Chen X, Wang Z (2021) Reproductive health at work: A multidisciplinary approach. Madrid: Editorial Médica Panamericana.
3. Hansen J, Smith K, Jones L (2019) Effects of shift work on female reproductive health.
4. Ministry of Health of Peru. (2022) Report on the health situation of women in the Ica region. Lima: Author.
5. Fernández M, González L, López R (2020) Gender inequalities and access to reproductive health services in rural women in Peru. Latin American Journal of Public Health 25(3): 1-10.

DOI: 10.19080/JGWH.2024.27.556203

How to cite this article: Víctor José Ramón Blanco L. Impact of Working Conditions on Reproductive Health in Executing Unit 401 (San José De Chincha Hospital) From the Point of View of Occupational Hygiene. J Gynecol Women's Health 2024: 27(1): 556203. DOI:10.19080/JGWH.2024.27.556203