



GLOBAL JOURNAL OF MEDICAL RESEARCH: E
GYNECOLOGY AND OBSTETRICS
Volume 18 Issue 2 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Occupation and Male Infertility among Selected Group of Sudanese Patients with Infertility Disorders

By Mohammed Omer Mohammed Hussein, Mohamed A. Gafoor A. Gadir,
Mosab Nouraldein Mohammed Hamad & Maha Alameen

Elsheikh Abdallah Elbadri University

Abstract- Background: Occupation affect directly or indirectly the reproductive system of male and that may lead to serious complications, which may lead finally to male infertility.

Justification: There is no published data about the association between occupation and fertility among Sudanese males.

Objectives: To know which type of the occupations is associated with high infertility rate than the other jobs among the study group

Method: Descriptive, cross sectional study, 157 participants involved in the study from different occupational environments.

Result: Workers were the most affected group (29.2%) followed by shopkeepers (10.8%), drivers (10.2%), employees (8.2%), Engineers (7.6), Security officers (5.7%), teachers (3.2%), farmers (3.2%), medical (1.9%), butchers (1.2%), others (18.8%).

Keywords: occupation, male infertility, sudanese.

GJMR-E Classification: NLMC Code: WJ 709



Strictly as per the compliance and regulations of:



Occupation and Male Infertility among Selected Group of Sudanese Patients with Infertility Disorders

Mohammed Omer Mohammed Hussein ^α, Mohamed A. Gafoor A. Gadir ^σ,
Mosab Nouraldein Mohammed Hamad ^ρ & Maha Alameen ^ω

Abstract- Background: Occupation affect directly or indirectly the reproductive system of male and that may lead to serious complications, which may lead finally to male infertility.

Justification: There is no published data about the association between occupation and fertility among Sudanese males.

Objectives: To know which type of the occupations is associated with high infertility rate than the other jobs among the study group

Method: Descriptive, cross sectional study, 157 participants involved in the study from different occupational environments.

Result: Workers were the most affected group (29.2%) followed by shopkeepers (10.8%), drivers (10.2%), employees (8.2%), Engineers (7.6), Security officers (5.7%), teachers (3.2%), farmers (3.2%), medical (1.9%), butchers (1.2%), others (18.8%).

Discussion: Occupation settings, overheated environment and work stress affect directly or indirectly in male fertility and may lead to infertility, our study agreed with that of B Baranski in points of the effects work settings and heat.

Conclusion: Further studies should be done with large sample size

Acknowledgement: To all persons whom participated in the study.

Keywords: occupation, male infertility, sudanese.

I. INTRODUCTION

Infertility is “a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.”⁽¹⁾

Male infertility refers to a male's inability to cause pregnancy in a fertile female. In humans it accounts for 40–50% of infertility. It affects approximately 7% of all men. Male infertility is commonly due to deficiencies in the semen, and semen quality is used as a surrogate measure of male fecundity.⁽²⁾

II. MALE INFERTILITY EPIDEMIOLOGY

Infertility issues plague nearly 15% of couples in the world. This means that close to 48 million couples worldwide have trouble conceiving a baby despite trying

to for a year or more. Of these cases nearly 30% are due to male infertility issues. There is no way to accurately pinpoint cases of male infertility across the globe, but recent studies conducted on a region and country basis by different organizations have made it possible to gain a better understanding of the disorder.

III. INCIDENCE AND DISTRIBUTION

According to the CDC, infertility affects close to 12% of the population of the United States in the sexually active demographic. Since a number of infertility cases do not get reported in various other countries across the globe, the actual number of cases may be much higher.

A WHO study undertaken between 1994 and 2000 found that North Africa and West Africa had the highest rates of infertility at 4.24 - 6.35% while Central Asia and East Asia were recorded. The estimated number of infertile men in the world ranges between 30,625,864 and 30,641,262. The highest concentration of male infertility was found in Europe. The WHO study also found that the African infertile belt had a high rate of sexually transmitted diseases caused by bacteria such as *N. Gonorrhoeae* and *C. Trachomatis*. With the lowest infertility rates of 2.05 - 3.07%.⁽³⁾

Global infertility prevalence rates are difficult to determine, due to the presence of both male and female factors which complicate any estimate which may only address the woman and an outcome of a pregnancy diagnosis or live birth.

One in every four couples in developing countries had been found to be affected by infertility, when an evaluation of responses from women in Demographic and Health Surveys from 1990 was completed in collaboration with WHO in 2004.

The burden remains high. A WHO study, published at the end of 2012, has shown that the overall burden of infertility in women from 190 countries has remained similar in estimated levels and trends from 1990 to 2010.

A WHO evaluation of Demographic and Health Surveys (DHS) data (2004), estimated that more than 186 million ever-married women of reproductive age in

Author ^α ^σ ^ρ ^ω: Banoun Center for Assisted Reproduction & Obstetrics
& Gynecology Elsheikh Abdallah Elbadri University.
e-mail: musab.noor13@gmail.com

developing countries were maintaining a "child wish", translating into one in every four couples. ⁽⁴⁾

IV. SYMPTOMS

The main sign of male infertility is the inability to conceive a child. There may be no other obvious signs or symptoms. In some cases, however, an underlying problem such as an inherited disorder, hormonal imbalance, dilated veins around the testicle, or a condition that blocks the passage of sperm causes signs and symptoms.

Although most men with male infertility do not notice symptoms other than inability to conceive a child, signs and symptoms associated with male infertility include:

- Problems with sexual function-for example, difficulty with ejaculation or small volumes of fluid ejaculated, reduced sexual desire or difficulty maintaining an erection (erectile dysfunction).
- Pain, swelling or a lump in the testicle area.
- Recurrent respiratory infections.
- Inability to smell.
- Abnormal breast growth (gynecomastia).
- Decreased facial or body hair or other signs of a chromosomal or hormonal abnormality.
- Having a lower than normal sperm count (fewer than 15 million sperm per milliliter of semen or a total sperm count of less than 39 million per ejaculate). ⁽⁵⁾

V. CAUSES

More than 90% of male infertility cases are due to low sperm counts, poor sperm quality, or both. The remaining cases of male infertility can be caused by a range of conditions including anatomical problems, hormonal imbalances, and genetic defects. ⁽⁶⁾

a) Sperm Abnormalities

i. Sperm morphology (teratozoospermia)

It is the shape and size of sperm, which means the head should be oval in shape, have a mid-section, and have a long, straight tail. If sperm have a double tail, no tail, or a head that is crooked, misshapen, has double heads, or too large, it is considered to be abnormal, and therefore unable to successfully penetrate an egg. Sperm morphology is routinely tested for in the male infertility semen analysis. Most men have a large percentage of abnormal sperm morphology, with only 4-15% of their sperm being considered normal. What is important is that that 4-15% has good vitality and motility. Also important is the overall volume of semen, sperm concentration, and sperm count.

Men with abnormal sperm morphology are still perfectly capable of fathering children; it just may take longer than normal to do so. This diagnosis does not mean infertility. It just means a challenge is ahead of you, and patience is going to be necessary. If natural

conception does not work, you always have the option of assisted reproductive technology like in vitro fertilization and Intra Cytoplasmic Sperm Injection (ICSI).

One issue with abnormal sperm morphology is that there is no easy fix. There is no one pill, vitamin, shot, or surgery that will fix this issue. This does not mean you should not give these options a try before resorting to assisted reproductive technology, it just means that it is advisable to set a defined period for trying it. Have a semen analysis after 3 months to see if the treatment is working. The longer you try it, the older your female partner gets, and the lower her fertility gets. If you spend years on these treatments, you lower the chances of success from even the best ART treatments. Intrauterine insemination (IUI) is not recommended for patients with abnormal sperm morphology. In general, ICSI is the most recommended treatment because an embryo can be created with any sperm, regardless of the quality of the sperm being used. ⁽⁷⁾

It has been recognised for many years that occupational exposure to lead could affect male fertility at sufficiently high doses. The discovery that dibromochloropropane (DBCP), a nematocide used particularly in sub-tropical climates, could induce azoospermia raised concerns that other chemical compounds might affect spermatogenesis. A relatively small number of substances particularly pesticides (for example, keptone4 and ethylene dibromide), organic solvents (for example, carbon disulphide) and physical agents (heat and driving) were identified as possibly influencing parameters (count, motility or morphology) measured in routine semen analyses. ⁽⁸⁾

Heat may not be something that you think about when considering your occupation and fertility, but overheated working environments can also have an impact on male fertility. ⁽⁹⁾

The infertility due to occupation environment's is a big problem that may affect not only the workers in that environment but it affect the whole community ,then the safety department should perform strong safety guidelines , that aid to preserve the workers fertility .

VI. LITERATURE REVIEW

Study done by B Baranski showed that; the certain chemicals, heat and occupational settings may affect a function of male genital system and then lead to infertility. ⁽¹⁰⁾

VII. JUSTIFICATION

There is no published data about the association between occupation and fertility among Sudanese males.

VIII. OBJECTIVES

To know which type of the occupations is associated with high infertility rate than the other jobs among the study group.

IX. MATERIALS AND METHODS

Study Design: Descriptive, cross sectional study.

Study Period: July –October, 2016.

Study Population: Sudanese, adult males, performing different occupations and suffering from infertility disorders.

Sample Size: 157 Participants.

X. SELECTION CRITERIA

a) Inclusion Criteria

- Sudanese
- Adult
- Male
- Employed

b) Exclusion Criteria

- Not Sudanese
- Child
- Female
- Unemployed

XI. ETHICAL CONSIDERATION

All participants were informed about the purpose of the study and all of them were consent.

Data Collection: Data were collected through questionnaire.

XII. RESULT

Workers were the most affected group (29.2%) followed by shopkeepers (10.8%), drivers (10.2%), employees (8.2%), Engineers (7.6%), Security officers (5.7%), teachers (3.2%), farmers (3.2%), medical (1.9%), butchers (1.2%), others (18.8%).

XIII. DISCUSSION

Occupation settings, overheated environment and work stress affect directly or indirectly in male fertility and may lead to infertility, our study agreed with that of B Baranski in points of the effects work settings and heat.

XIV. CONCLUSION

Further studies should be done with large sample size

ACKNOWLEDGEMENT

To all persons whom participated in the study.

REFERENCES RÉFÉRENCES REFERENCIAS

1. <http://www.who.int/reproductivehealth/topics/infertility/definitions/en/>
2. https://en.wikipedia.org/wiki/Male_infertility
3. <https://www.news-medical.net/health/Male-Infertility-Epidemiology.aspx>
4. <http://www.who.int/reproductivehealth/topics/infertility/burden/en/>
5. <https://www.mayoclinic.org/diseasesconditions/male-infertility/symptoms-causes/syc-20374773>
6. <https://www.umm.edu/health/medical/reports/articles/infertility-in-men>
7. <https://www.babymed.com/male-infertility/abnormal-sperm-morphology-and-male-infertility>
8. <http://oem.bmj.com/content/65/10/708>
9. <https://www.ovusense.com/au/blog/2015/11/03/is-your-occupation-affecting-your-fertility/>
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1519945/>