Identification of the Environmental Factors that lead to High Infertility Rates Among Women

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Abstract

The reproduction process is a highly sensitive process that needs to focus on different changes in the human body. In this process, environmental factors are equally responsible as this impact the chances of increasing infertility or fertility. This study is focusing on the process of identification of the environmental factors that lead to high infertility rates among women and describe the facts in a detailed manner. There are several factors are associated which are affecting and increasing the infertility rate among women. Thus, following specific rules and restrictions can help in managing the growth in the fertility process and secure population growth. The researcher has selected qualitative research design, interpretivism research philosophy, and exploratory research type to shape the structure of the research process. In addition to this, to collect relevant and valuable data, the researcher has found the "qualitative data collection process" effective for leading this particular study. It has been seen that this data collection process improved the recognition of issues and also make it possible to provide potential solutions. After collecting raw data, the researcher observed that "thematic analysis" has made the outcome more understanding and meaningful.

Keywords: environmental factors, infertility, toxins, fertility, eggs, sperms.

1. Introduction

Infertility is a disease or a reproductive disorder in men and women that obstruct pregnancy, and it is a growing issue that affects millions of people worldwide. Every human being has a right to enjoy the highest attainable standards of mental, physical and reproductive health. Infertility affects reproductive health and negates the reproductive right of an individual. Infertility may be caused by different factors, and it affects males and females equally. Pregnancy has never been achieved by a person in primary infertility, whereas, at least one prior pregnancy has been achieved in secondary infertility. Therefore, addressing the reasons for infertility is an important part of improving the reproductive health of an individual or a couple. Addressing infertility can also help in reducing gender inequality in society. There are different factors that affect fertility among men and women, but environmental factors are also significant in increasing infertility among women. This study is conducted to understand the different environmental factors that can lead to infertility among women and this study will also focus on the different strategies that can be implemented to avoid infertility.

Aim and objectives.

The main purpose of the study is to understand infertility and identify different factors that lead to infertility among women and this study also focuses on different strategies that can be implemented to avoid infertility among women.

Objectives

- To understand different causes and risk factors of infertility among women
- To identify different environmental toxins and factors that can be impactful in increasing infertility among women.
- To evaluate different strategies for minimising the impact of environmental factors that

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leads to infertility among women

2. Methods

Methodology in a research paper is a structural way that suggests proper research design, type and philosophy in a research paper. The methodology also gives ideas for data collection and analysis techniques to make research studies more efficient [1]. The research design refers to the structural process of research that helps to perform the research study structurally. Different research designs are there but this research follows the qualitative research design that has helped in conducting this study more efficiently. The qualitative research design is also useful as it is time-saving and it also supports different areas of research [2]. Research types are also significant for a research study, and it focuses on a clear understanding of the topic. Exploratory research type is selected here to clearly understand infertility and the major environmental factors that influence infertility among women.

On the other hand, research philosophy deals with the source, nature and development of the knowledge and also focuses on clearly understanding the research area [3]. This research follows the interpretivism research philosophy to provide flexible evolution of the issue and prior knowledge and understanding during the research process. Data collection and analysis help to make decisions from the research study and also helps to make solutions more easily. The qualitative data collection and analysis methods are suitable for this research to understand the issue more prominently. Qualitative data collection improves the understanding of the issue and helps to make decisions from the research more efficiently [4]. Qualitative data collection is comparatively easy and time-saving which makes research more time efficient. It helps to in-depth analysis of the issue and that improves the research outcome. Depending on the mentioned aspects and qualitative data collection procedure, a thematic analysis has been selected that makes the research study more concentrated and meaningful. Thematic analysis related to infertility helps to understand the different environmental factors that influence infertility among women. Thematic analysis is conducted in this study as it does not need any theoretical and technological knowledge. It offers a more accessible form of analysis that makes research study easy and time efficient [5]. Therefore, following the mentioned methodological tools have helped in conducting the paper and attaining an effective outcome.

3. Results

Theme 1: Causes of infertility and risk factors in women.

Infertility is an emerging health issue among women that affects around 48 million couples and over 186 million individuals globally [6].It has different causes and various risk factors that can potentially lead to infertility among women. Female infertility is caused by different factors and ovulation disorders where the damage of fallopian tubes and uterine or cervical causes are major of them. Disorder in the ovaries is the major cause of infertility that can potentially lead women towards infertility. Polycystic ovarian syndrome and different follicle disorders are responsible for growing infertility among women [7]. Fallopian tubes are very important in women's reproductive systems and disorder in fallopian tubes is one of the major causes of infertility among women. Blockage in fallopian tubes due to untreated sexually transmitted infections increases the risk of infertility among women. Inflammation in the uterus and other uterine disorders increase the risk of infertility and sometimes it becomes the major cause of infertility among women.

The endocrine system plays a significant role in the women's health and reproductive system, and it controls important hormones in the female body. Different disorders in the endocrine system sometimes become the cause of hormonal imbalance in the female body and the hormonal imbalance increases the risk of infertility among women [8]. Besides these causes, there are different risk factors that have the potential to increase infertility among women. Certain factors that may put women at high risk of infertility include age, smoking, gaining weight, sexual history and alcohol. The quality and quantity of eggs in the female reproductive system begin to decline with age.

Hence, difficulties in conception increase with ageing and that lead women toward infertility. Smoking and consumption of alcohol is the major cause of damage to fallopian tubes and smoking also increases the risk of miscarriage among women. Body weight is also significant to reduce the risk of infertility among women. Maintaining a healthy body mass index (BMI) is important to reduce the risk of infertility among women [9]. Sexually transmitted diseases such as chlamydia and gonorrhoea can damage the fallopian tubes and that can potentially increase infertility among women. These mentioned aspects thus emerge as the major risk factors and causes of infertility among women [21].

Theme 2: Environmental toxins and infertility

In reproductive health, environmental toxins have a great effect which controls the infertility process. Environmental toxins are pervasive and frequently affected the fertility system. There are several types of environmental toxins which are continuously affecting the reproduction growth among women that resulted in an increase in infertility rate. It includes “certain industrial chemicals”, “radiation”, and “environmental pollutants” [10]. In this context, it can be mentioned that “lead poisoning” is one of the elements that is connected with infertility in both women and men. In addition to this, “x-ray therapy”

is also one of the reasons behind the increasing infertility rate. It is identified as extremely toxic for the human body which impacted the egg production process. "Chemotherapy" is another environmental toxin that collision sperm and egg that is able to conduct the entire human body function transfer into permanent infertility.

Based on this result, several times, many fertility programs suggest men to store their sperm before undergoing chemotherapy. Along with this, for women, the fertility program suggests doing the experience of egg retrieval before undergoing chemotherapy. It also has been seen that excessive bicycling process also resulted in infertility [11]. Many times, it also has been observed that the collaboration of environmental toxins leads an individual unable to conceive. Besides this, it also has resulted in miscarriage and permanent infertility. Apart from this, a clear reason for toxin subjection in the air s tobacco use which impacted the passive smoking process for pregnant women. In several cases, a long soak in the bathtub also increases the chances of getting infertility. Long sitting also disturbs the egg production process which causes infertility. The rising pollution level continuously impacted the human body's growth and the chances of fertility. Other toxins substances such as dry-cleaning fluids, mercury, lead, paint thinners, and pesticides are also impacted negatively on human health which influences the infertility ratio.

Theme 3: Main environmental factors that contribute to high fertility rates among women.

The process of fertility is entirely dependent on the psychological, physical, and chemical environments. It can be changed easily with the influence of any kind of disturbance of physical activities. The system of reproduction is highly sensitive, and it requires proper attention [12]. At the moment an individual woman is trying to conceive she needs to focus on the food consumption process. Food has a great impact on health and the reproduction system. Organic food is always beneficial for a healthy body as it contains higher antioxidant levels which are very important for a mother. It has been found antioxidants are capable of protecting the structure of DNA which is identified as valuable in shaping the egg and sperm. Thus, almost no food is certified as 100% "free of pesticides" but organic food allows a limited percentage of pesticides which is less harmful rather than any other food.

In addition to this, selecting an atmosphere that is full of fresh air can serve as a better healthy atmosphere for a woman to increase her chances of getting fertility. Besides this, the chances of conceiving and carrying a baby also can be maintained perfectly. Fresh air not refreshes the mood but also helps in increasing the quality of eggs [13]. A refreshing atmosphere is also playing as the role of an influence in reducing ovarian reserve. In addition, sunray is also helpful in developing the body to increase the opportunity for fertility. Due to improving hormone levels, vitamin D is very effective. As sunlight produces vitamin D in the body it can protect the creation process of bones accurately.

In addition, during the fertility period, it is very essential to stay hydrated as it serves the capability of transforming the hormones throughout the body. In increasing follicles in the body to lubricate all the tissues, drinking purified water is really important for fertility [14]. It is also helpful in washing the body's extracted elements and keeping fresh the body with the required nutrients. All the ovulation, sperm production, and egg production can become developed with the help of consuming the water level and balancing it as per the body's requirements.

Theme 4: Strategies for minimising impact of environmental factors that lead to infertility.

It is identified that increasing pollution, industrial chemicals, radiation, and chemicals in food items are the main environmental factors that lead to fertility. Some potential strategies for minimising the negative effects of the environmental factors on women are discussed in this section of the study. Women need to be concerned and aware about the environmental factors that affect infertility such as plastics which include Bisphenol A and the chemical can lead to infertility [15]. Lower use of plastics or avoiding the use of plastics is an effective strategy for minimising the chances of infertility. Apart from that, BPA and Dioxins are the chemicals that people consume through beverages and food which are environmentally effective on infertility of women.

Maintaining a healthy diet and avoiding fast foods and beverages is another natural way of avoiding negative effects of environmental factors on infertility. Women need to be aware about the food products and other products which include these chemicals and avoiding those products will be beneficial for reducing the chances of infertility [16]. On the other hand, heavy metals such as mercury, lead and cadmium are also environmentally effective on infertility. Exercising is an effective strategy for minimising the effects of these environmental factors. Women need to be active which reduces the chances of many diseases a well as prevents the impacts of environmental factors on infertility. In addition to that, women are suggested to avoid polluting the environment and reduce screen timing as the increasing radiation enhances the chances of infertility for them.

4. Discussion

There are many factors that contribute to infertility such as physical factors, environmental factors and others. The particular study specifically sheds light on the environmental aspects that enhances the chances of infertility among women. It is identified that use of different types of chemicals in different

products and foods plays a crucial role in increasing infertility [17]. Some of the critical environmental aspects that are used as chemicals in product manufacturing, food products and beverages are "Bisphenol A", dioxins, phthalates, heavy metals and DDT. These aspects are known as environmental toxins which affect the organs in the human body and contribute to suffering from many diseases. All of these toxins are highly impactful on the body and enhance the chance of infertility.

Heavy metals which are considered as environmental toxins such as cadmium, lead, arsenic and mercury have a great participation in increasing infertility. Lack of awareness and knowledge regarding these factors and their negative impacts among women enhances infertility [18]. On the other hand, specific lifestyle and some other factors are also effective on infertility. The number of female smokers has been increasing in the world and smoking is a major cause of increasing infertility. Besides, less activity or exercise and unhealthy food consumption are other factors that highly contribute to the enhancement of infertility. Women should be aware about these factors and maintain prevention strategies for reducing the negative impacts and the chances of infertility.

Various complex and risky factors in the surrounding environment can contribute to increased infertility rates among women. The increasing pollution and excessive use of toxic chemicals, pesticides and increasing pollution have enhanced the difficulties of conception among women. It has been identified that organic food products consist of fewer toxic chemicals and pesticides than other food products and help to develop antioxidants that eventually protect DNA. it has been observed that "environmental factors" consists of a direct connection with the fertility rate of both male and females [18]. On the other hand, it has been identified that environmental pollution is the main cause behind the increasing infertility rate among women, hence, ensuring fresh air and sunray can help to enhance the fertility rate among women by developing potential antioxidants and improving immunisation. It has been observed that organic food contains fewer toxic metals, pesticides and "synthetic fertiliser" [19]. Ensuring proper maintenance of these environmental factors can lead to a high fertility rate among women along with improving their health. Therefore, it can be stated that the environment poses a direct impact on the reproductive health of women.

Having a high infertility rate among women can pose a severe impact on the mental and physical aspects of women and increasing use of toxic chemicals, radiation and industrial pollution have been identified to be the major environmental causes. Regarding this, implementing effective strategies to prevent environmental impacts on fertility has become imperative. Environmental pollution has been observed to pose a vital impact on the fertility rate of women [20]. In this context, females have to be concerned about "environmental pollution and require to avoid polluting objects, including toxic chemicals and plastic. Along with that, avoiding unhealthy dietary habits are also highly required to improve the health condition of women. Various types of food products consist of toxic chemicals, colours and pesticides which impact female fertility. Creating awareness of the potential aspects that have to be adopted or neglected is crucial for improving fertility among women.

5. Conclusion

The main focus of the following study is to address the major environmental factors causing high infertility rates among women and potential strategies to reduce the infertility rate have also been proposed. Several factors and causes leading to infertility among females have been identified, including damage in the fallopian tubes, "polycystic ovarian syndrome", and blockage in the fallopian tubes and issues in the "endocrine system". The main environmental factors that have been addressed are the consumption of organic food, water and fresh air which influences the high fertility rate among women. Potential strategies have been recommended that can help to reduce the infertility rate, such as creating awareness of the factors that can cause infertility. Women have to ensure proper maintenance of a healthy diet and avoid unhealthy beverages and foods. Existing secondary data has been explored and the outcomes have developed effective insights into the major environmental factors contributing to increasing the infertility rate among females.

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