

UNIVERSITI TEKNOLOGI MARA

**TRENDS ON PHARMACOLOGICAL
INTERVENTIONS AND SURVEY ON
KNOWLEDGE AND PERCEPTION OF MALE
INFERTILITY IN INFERTILE MALES**

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Thesis submitted in fulfillment of the
requirements for the degree of
**Doctor of Philosophy
(Clinical Pharmacy)**

Faculty of Pharmacy

November 2024

ABSTRACT

Globally, an estimated 15% of couples, totaling 48.5 million couples, experience infertility. Males are identified as the exclusive cause in 20-30% of infertility cases and contribute to 50% of cases overall. The rising prevalence of male infertility is mainly due to lack of information and knowledge about disease prevalence and treatment. The general aim of this thesis was to investigate the available pharmacological and herbal interventions for the treatment of male infertility. A 23-item male infertility questionnaire was developed and validated. A cross-sectional study using 23-items male infertility tool was conducted on 220 patients to assess knowledge and perception of male infertility and its treatment in infertile male population. The results of the network meta-analysis indicate that the intake of supplements is associated with elevated sperm concentration levels (6.26, 95% CI 3.32, 9.21). Conversely, the use of SERMs was linked to an increase in both percentage sperm motility (6.69, 95% CI 2.38, 10.99) and serum FSH levels (3.63, 95% CI 1.48, 5.79). Hormone consumption was found to enhance sperm morphology (3.71, 95% CI 1.34, 6.07). Additionally, supplements were observed to raise total testosterone levels (2.70, 95% CI 1.34, 4.07). The systematic review indicated that Herbal interventions might improve semen parameters in males with infertility. *Hochu-ekki-to* and *W. somnifera* have shown the most promising results and should be studied further in a larger sample size. The 23-items in the tool were found to be highly consistent internally with the Cronbach's α value of 0.759. Results of cross-sectional study about knowledge of infertile male patients suggested that semen analysis is the most important and popular way to diagnose male infertility (n=146, 66.4%) but the finding were insignificantly associated with age of the patients ($\chi^2 = 14.250$, df = 8, p = 0.057), level of education ($\chi^2 = 9.807$, df = 6, p = 0.109) and years of infertility ($\chi^2 = 8.897$, df = 8, p = 0.370). Majority of the infertile patients thought that smoking tobacco is the most important cause of male infertility (n=147, 65.5%). The findings were significant associated with age of the patients ($\chi^2 = 15.076$, df = 8, p = 0.046) insignificantly associated with level of education $\chi^2 = 9.162$, df = 6, p = 0.147) and years of infertility ($\chi^2 = 13.475$, df = 8, p = 0.081). The most important and common symptom of male infertility was found to be low sperm count (n= 108, 49.1%). The results were significantly associated with age of the patients ($\chi^2 = 21.858$, df = 8, p = 0.005), insignificantly associated with level of education ($\chi^2 = 4.751$, df = 6, p = 0.567) and years of infertility ($\chi^2 = 9.538$, df = 8, p = 0.299). Difficulty in husband wife relationship was found to be most important complication of male infertility in the knowledge of infertile male patients (n= 116, 52.7%) and the results were significantly associated with age of the patients ($\chi^2 = 15.309$, df = 8, p = 0.046), insignificantly associated with level of education ($\chi^2 = 8.166$, df = 6, p = 0.226) and years of infertility ($\chi^2 = 12.239$, df = 6, p = 0.056). No significant difference between groups was observed. The knowledge about the diagnosis (n=136, 62.4%), causes (n=115, 52.5%), symptoms (n=130, 59.4%) and complications (n=109, 49.8%) of male infertility in infertile male population in the study falls under the category of moderate level knowledge.

ACKNOWLEDGEMENT

All praises and thanks are for Almighty ALLAH, the source of all knowledge and wisdom endowed to mankind, to whom we should bow down for guidance in difficulties and darkness's, who guides us and helps us in all thick and thins of life. All respects are for our Holy Prophet Hazrat Muhammad (peace be upon him) Who enabled us to recognize our creator and showed us the right path to humanity.

I would like to express my pronounced gratitude humblest and sincerest words of thanks to my honorable Supervisor, Dr. Mahmathi Karuppannan, Associate Professor, Faculty of Pharmacy, UiTM, for her supervision and professional guidance, unfailing supportive attitude, and scientific advice at all stages of my research work.

I am much thankful to my field supervisor Assoc. Prof. Dr. Tahir Mehmood Khan, Director, IPS, UVAS, for his help, guidance, encouragement, and support. Without his knowledge and guidance this could not have been possible and his inspiring help, consistent encouragement and affectionate attitude during the entire study will ever be remembered.

I am highly thankful to my co-supervisors Dr. Qi Ying Lean, Senior Lecturer and Dr. Neoh Chen Fen. Faculty of Pharmacy, UiTM, for their efforts and encouragements in my thesis work.

I feel highly privileged in thanking Professor Dato' Dr. Abu Bakar Abdul Majeed, Dean, Faculty of Pharmacy, UiTM, and the entire academic staff that help me towards my postgraduate affairs no doubt their efforts made this memorable occasion possible.

A special thanks goes to Dr. Khaleeq-ur-Rehman, Professor, Urology, FMH, Lahore and all the nurses, clinician staff and non-medical staff at Fatima 'Memorial Hospital for making this research possible by helping me in recruiting the patients for the collection of data.

Most importantly, a tremendous gratitude goes to my wife Dr. Kiran Waqar and offspring (Zimal Nabeel and Muhammad Shahzain Nabeel) for their love, support and help in soothing me during the tense moments of my thesis and being source of inspiration for me believe in me all the way through this bumpy journey of mine. My heartfelt appreciation goes to my parents (Dr. Muhammad Nadeem Shahid and) and brothers (Muhammad Hasaan Shahid and Muhammad Waleed Shahid) whom with their endless prayers and loving support I was able to finish this thesis.

Last but not the least; I highly appreciate the support of my friends Dr. Allah Bukhsh, Dr. Hammad Saleem, Dr. Shoaib Ali Gill, Dr. Faisal Nadeem, Dr. Kashif Maqbool Khan, Dr. Tahir Ali, my students, and my workplace for their untiring efforts in the whole process.

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CHAPTER ONE

INTRODUCTION

1.1. Research Background

Sexual health forms a cornerstone of individuals', couples', and families' physical and emotional wellness, contributing significantly to the social and economic development of communities and nations. Yet, ensuring good sexual health and well-being requires several key factors: access to suitable treatment plans, comprehensive knowledge about sexuality, awareness of potential risks and vulnerabilities related to sexual activity, access to high-quality sexual health care services, and an environment that supports and encourages sexual health (*Sexual health, human rights and the law*, 2015).

A recently published report by the World Health Organization (WHO) reveals that 17.5% of the world's population encounters infertility at some point in their lives, highlighting the necessity to enhance access to inexpensive, good-quality fertility care for those affected (Jakuszewicz, 2023). Medically, a condition associated with reproductive systems of male and female leading to inability to get pregnant even after 12 months of regular unprotected intercourse is characterized by infertility (Krueger et al., 2017). Large number of couples in their reproductive ages are affected by infertility and the effects are ongoing in families and communities. Globally, multiple studies suggest that approximately 186 million individuals (male and female) and 48 million couples are effected with infertility (J. Boivin, Bunting, Collins, & Nygren, 2007; M. N. Mascarenhas, S. R. Flaxman, T. Boerma, S. Vanderpoel, & G. A. Stevens, 2012; Rutstein & Shah, 2004).

Among male patients, intimate health concerns are not uncommon, with approximately 40–70% experiencing some form of sexual dysfunction (Braun et al., 2000). Globally, at least 30 million men grapple with infertility, with the highest prevalence found in Africa and Eastern Europe (Ashok Agarwal, Aditi Mulgund, Alaa Hamada, & Michelle Renee Chyatte, 2015b).