

Research Article

Fertility Preservation, Knowledge and Practice among Oncologists in Saudi Arabia

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Citation: Almuhanna AM, AlTarrah H, Alali H, Chamdine O, Azam F, et al. (2024) Fertility Preservation, Knowledge and Practice among Oncologists in Saudi Arabia. Adv Reprod Sci Reprod Health Infertil 04: 112. DOI: <https://doi.org/10.29011/ARRHI-112.100012>

Received Date: 06 January, 2024; **Accepted Date:** 17 January, 2024; **Published Date:** 22 January, 2024

Introduction

Advances in cancer therapy have been positively linked to improved prognosis and survival in cancer patients [1]. However, this improvement has been associated with long term therapy related-morbidities that can deteriorate patients' quality of life [1-4]. Approximately 5% of all cancer's cases are diagnosed in patients younger than 45 years, and 1% are younger than 20 years [5,6]. Adverse effects of cancer therapy in this young population can have reproductive consequences, affecting future fertility and childbearing ability [1-4]. Childbearing ability is one of the top concerns among cancer survivors. In addition, patients with infertility may experience emotional, psychological, and financial difficulties [4,7].

Fertility preservation practices, also known as oncofertility, have been evolved dramatically over the last decades [8,9]. One important way to manage fertility concerns in cancer patients is to incorporate of fertility preservation practices that have been endorsed by multiple national and international oncology guidelines [10-13]. It primarily focuses on applying medical methods to spare or re-store a reproductive function of cancer patients. Standard strategies for fertility preservation that were recommended by American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) include

cryopreservation of sperms, oocytes or embryos in patients who were diagnosed with cancer and received treatment that causes infertility [10-13]. Oncofertility programs typically require a rapid referral to fertility counseling and preservation services for post-pubertal cancer patients and a small population of prepubertal cancer patients. However, in most cases, patients are either not received fertility counseling or do not have access to preservation services and resources [14-20]. The purpose of our study was to assess the knowledge and the practice of fertility preservation among hematologist oncologists from different Oncology Centers across all regions of Saudi Arabia who treated cancer patients of reproductive age and childhood age.

Material and Methods

A questionnaire-based quantitative cross-sectional study was carried out with the goal of evaluating oncologists' fertility preservation referral practice in Saudi Arabia. The study population included oncologists from over 15 Saudi oncology centers who treated cancer patients of reproductive and childhood age between November 2021 and March 2022. The study sample was calculated using Epi info software. Accordingly, 89 Saudi Arabian Pediatric Hematology/Oncology Society members were enrolled. A stratified random cluster sampling among oncologists was done. Participants had to meet the following inclusion criteria:

1) work in one of the Oncology centers in Saudi Arabia from November 2021 to March 2022, 2) be registered as an Oncology specialist/consultant; and 3) agree to participate in the study. A self-administered pretested and validated questionnaire was used for this study. The questionnaire took about 5-10 minutes to complete and included eight sur-vey questions about background, scope of practice, oncologists-patients counseling about infertility risk, and fertility preservation options. The questionnaires were to be completed independently via an online form, collected on time, and returned anonymously and confidentially.

Statistical analysis

The data were entered and analyzed using the statistical package for social sciences, version 21 (SPSS, Chicago, IL, USA). Descriptive statistics were presented using counts, proportions (%), mean ± S.D whenever appropriate.

Results

The demographic characteristics of the participants: All participants who enrolled in the study responded and returned the questionnaire after properly filling it out, indicating 100% response rate. Table 1 shows the demographics of the participants. There was an equal distribution between male and female oncologists i.e., 50% each. The vast majority of participants (76%) were pediatric medical oncologists, with the remainder being adult medical oncologists. 45% of the participants were senior oncologists who had been in practice for more than ten years, while 55% had been in practice for less than ten years.

Variable	No.	%
Age		
Mean age: 39 years ± 7.73 years (range 29-57 years)	89	100
Sex		
Male	44	49.4
Female	45	50.6
Position		
Adult medical oncologist	21	23.6
Pediatric medical oncologist	68	76.4
Years of experience		
Less than 3 years	13	14.6
3-10 years	36	40.4
>10 years	40	44.9

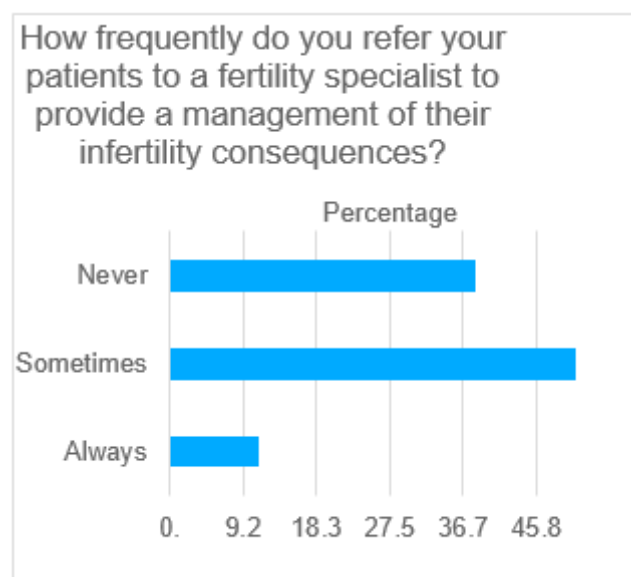
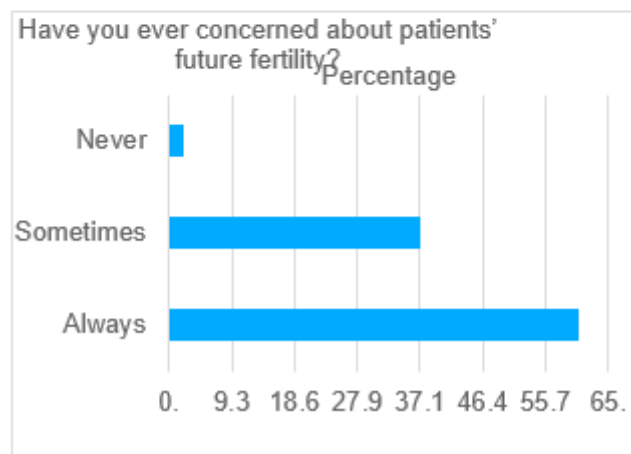
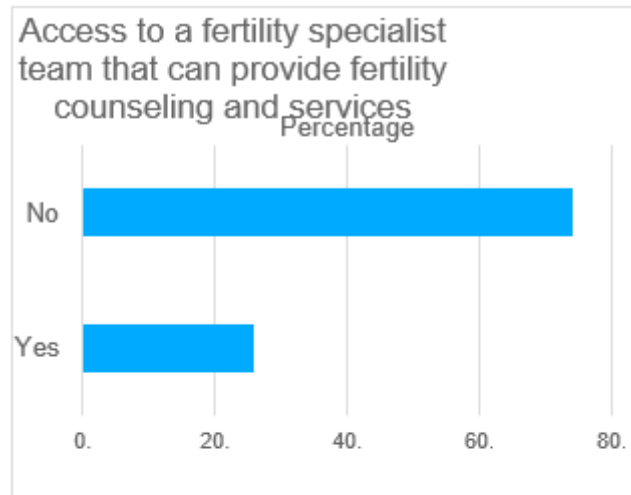
Table 1: The demographic characteristics of the oncologists who participated in the study.

The survey questionnaire included several questions designed to assess the access to a fertility specialist, oncologists’ concerns about their patients’ infertility and the referral practice to oncofertility specialist. Table 2 shows the referral practices of oncologists, along with detailed responses. 97.8% of the participants were worried about their patients’ future fertility. However, only 11.2% of the participants acknowledged that they always referred eligible patients to a fertility specialist. Referral rate was higher among senior practitioners who had been in the clinic for more than 10 years com-pared to those who had been there for less than 10 years. All participants (100%) agreed that it is essential to establish an oncofertility department, although only 25.8% of the participants had access to an oncofertility specialist that can participate in fertility counselling.

Questions	Response No.	Response %
Access to a fertility specialist team that can provide fertility counseling and services		
Yes	23	25.8
No	66	74.2
Have you ever concerned about patients’ future fertility?		
Always	54	60.7
Sometimes	33	37.1
Never	2	2.2
How frequently do you refer your patients to a fertility specialist for infertility management?		
Always	10	11.2
Sometimes	45	50.6
Never	34	38.2

Establishing an oncofertility department is essential to provide care for oncology patients who are at risk of fertility issues		
Agree	89	100
Disagree	0	0

Table 2: The participants' responses to questionnaire questions about their patients' fertility concerns, fertility preservation practices, and referral to an oncofertility clinic.



Discussion

One of the advantages of advanced practice in oncology is an increase of cancer patients' survival rates [1]. However, this improvement in survival is at the cost of long-term therapy-related complications including infertility [1-4]. Currently, oncology care has been extended from solely curing the disease to ensuring that survivors can perform their daily activities and live a fully functional life [1,18].

The guidelines recommended that physicians should communicate with all cancer patients of childbearing age and discuss with them fertility issues. Furthermore, the guidelines suggested that discussion of fertility preservation options with patients should be conducted before the beginning of treatment. However, poor adherence to the guidelines has been reported, and patient education is not usually provided [14-20]. According to Netherland study, approximately one-third of oncologists did not discuss fertility issues with their cancer patients, despite the fact that 81% of oncologists gave high importance to the provision of fertility preservation options [14].

The present study attempted to evaluate the hematologist oncologists' referral practice for fertility preservation and patient counseling across all regions of Saudi Arabia. Despite the concern about infertility, issue in cancer patients, our study found that the referral practice was suboptimal, with 74.2% of the oncologists enrolled in the study having no access to appropriate oncofertility units that can provide patients with education and counselling about fertility. Our results were similar to previous studies conducted in Saudi Arabia [21,22]. Furthermore, inadequate referral and poor fertility counseling have also been reported in other health care system such as USA, UK, Netherlands and Canada [14-20]. The lack of oncofertility support has been reported in Saudi Arabia. A study conducted in 3 different regions of Saudi Arabia found that only half of the oncologists had adequate knowledge about intracytoplasmic sperm injection [21]. Furthermore, less than 20% of their patients were referred to a specialist for sperm cryopreservation, indicating that their referral practice was not optimal. Another study conducted in Jeddah, Saudi Arabia, concluded that fertility counseling and patient referral to a specialized fertility clinic were not optimal, with only 37.8% of patients receiving fertility counseling and 17% seeing a fertility specialist [22]. Although there was a knowledge and desire among oncologists who participated in the study to refer their patients to such a service, the availability of specialized oncofertility units was restricted. Furthermore, our survey had some limitations, such as the fact that majority of participants were pediatric oncologist in which options for fertility preservation were limited. Altogether, infertility associated with cancer therapy is a major concern that can impair the quality of life of cancer survivors. It is critical to have a fertility specialized team that can guide these patients including young ones and their families, and discuss proper management and potential fertility preservation options with them.

Conclusion

The present study found that a significant number of the oncologists had no access to a specialized team that can provide fertility preservation and counseling services. We believe that this is a substantial issue that need to be adequately addressed. Therefore, we advocate for new initiatives to expand our practice

and provide appropriate counseling to oncology patients who are at risk of in-fertility. We have proposed establishing a dedicated oncology fertility preservation clinic in collabo-ration with fertility specialists from our neighboring governmental sectors that already have in vivo fertilization, as well as embryo, sperm and oocyte freezing services. The ultimate goal is to launch a joined team-based clinic that can offer routine care to all cancer patients.

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