



Impact of Pre- and Post-Management on IVF Outcomes: A Survey Based Study on Understanding the Management of Therapy from Gynaecologists Performing IVF Treatment

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Abstract

Introduction: *In vitro* fertilization (IVF) is a crucial assisted reproductive technology (ART) that assists couples facing infertility. Efficient pre- and post-IVF treatment and management is essential for maximizing success rates and safeguarding maternal and neonatal health. This study examines the management strategies of healthcare practitioners (HCPs) before and after IVF and their influence on patient outcomes, emphasizing a comprehensive approach that incorporates clinical, emotional, and lifestyle factors while also understanding the perceptions and challenges faced by couples undergoing treatment.

Objective: The primary aim is to evaluate pre- and post-IVF management strategies and their influence on success rates and patient experiences. Secondary objectives include comparing treatment methods, exploring lifestyle impacts, addressing male fertility, and understanding emotional well-being.

Methodology: A survey-based study was performed including gynaecologists and fertility specialists with more than five years of expertise in IVF, as well as individuals or couples who have completed at least one IVF cycle. Data was gathered via a web-based interface engineered to guarantee confidentiality and participant consent. The questionnaire included areas such as therapeutic practices, emotional support, and lifestyle modifications. Quantitative analysis was conducted utilizing SPSS software (version 25.0), incorporating univariate and bivariate analyses, alongside chi-square tests for hypothesis evaluation.

Results and Conclusion: The study successfully identified several key factors, which according to healthcare providers and couples, significantly influence the outcomes of IVF treatments. These factors include pre-IVF lifestyle adjustments, hormonal balance, genetic screening, and post-IVF emotional and physical recovery protocols. The respondents also shared valuable insights into the challenges and opportunities for enhancing IVF management practices. These insights can become instrumental in formulating novel strategies for improving IVF success rates and optimizing patient experiences.

Keywords: *In Vitro* Fertilization (IVF); Fertility; Healthcare Professionals (HCPs)

Introduction

Commonly used fertility treatment *in vitro* fertilization (IVF) combines eggs and sperm in a lab environment to produce embryos then transported to the woman's uterus. Although the procedure can be physically and emotionally taxing, it can be helpful in assisting couples trying to conceive. Therefore, while starting this road of fertility, pre- and post-IVF care should be given more thought.

Pre-IVF management

Pre-IVF management is medical procedures and lifestyle adjustments meant to ready the body for pregnancy. Women who dropped weight, quit smoking, and cut their alcohol intake before IVF had more pregnancies than those who did not make these lifestyle changes, according one study [1]. Moreover, studies have indicated that several drugs and supplements could enhance IVF results and fertility. For women undergoing IVF, for instance, a sys-

tematic study revealed that antioxidants like selenium and vitamin E may increase ovarian responsiveness and fertilizing rates [2]. Aspirin taken both before and during the IVF process was linked, accordingly another study, to greater rates of pregnancy and live birth [1].

Apart from these treatments, controlling stress is absolutely essential to maximize the body's IVF preparation. Research shows that extreme stress might disturb hormonal balance, so lowering the possibility of success. Suggested as good strategies to lower tension during the getting ready stage are mindfulness, yoga, and meditation.

Furthermore, often before beginning IVF is a thorough medical assessment. To find any underlying problems influencing the result, this covers evaluating hormone profiles, ovarian reserve, and uterine condition. Sometimes treating disorders like endometriosis or polycystic ovary syndrome (PCOS) before starting the IVF process will greatly raise the success rates.

Pre-IVF preparation depends much on nutritional counseling as well. A diet high in whole grains, lean meats, fruits, and vegetables together with enough water will improve general reproductive health. Recent studies have underlined how particular nutrients, including vitamin D, omega-3 fatty acids, and folic acid, might help to improve fertility and support early pregnancy development.

Finally, throughout pre-IVF treatment, the couple's healthcare provider's open communication is absolutely vital. Establishing reasonable expectations, talking about possible hazards, and knowing the tailored treatment plan will help to lower anxiety and guarantee a more seamless travel. Couples can maximize their chances of success in their IVF process by approaching both physical and emotional well-being holistically.

Role of AMH in predicting fertility outcome

Ovarian cells produce anti-müllerian hormone (AMH), which affects female fertility. Ovarian reserve can be determined by blood AMH levels.

AMH levels and *in vitro* fertilization have been studied extensively. Low AMH levels may reduce IVF response and pregnancy rates [2]. Others have demonstrated that AMH levels may be a good indicator of ovarian response to drug stimulation, which can assist optimize drug dose and timing during IVF [3].

Success of DHEA supplements in IVF

DHEA is crucial for *in vitro* fertilization (IVF) and fertility. It is synthesized by the adrenal gland and transformed into testosterone and estrogen. Decreased DHEA levels in advanced age are associated with diminished ovarian reserve and worse IVF success rates.

Numerous recent research have investigated the potential benefits of DHEA supplementation for IVF patients. DHEA supplementation enhances fertilization, pregnancy, and live birth rates in women with diminished ovarian reserve [4]. A separate study indicated that DHEA supplementation enhances live birth rates in women over 40 undergoing IVF [5]. A randomized controlled trial shown that DHEA supplements enhance pregnancy rates in women with diminished ovarian reserve who had unsuccessful IVF attempts [6].

Methodology

A survey-based study was performed including gynaecologists and fertility specialists with more than five years of expertise in IVF. Data was gathered via a web-based interface engineered to guarantee confidentiality and participant consent. The questionnaire included areas such as therapeutic practices, emotional support, and lifestyle modifications. Quantitative analysis was conducted utilizing SPSS software (version 25.0), incorporating univariate and bivariate analyses, alongside chi-square tests for hypothesis evaluation.

The survey was conducted among gynaecology professional minimum five years' work experience in the field. The total sample size calculated for the group was 96.

Results

The collected data provides an overall idea about the participants, their educational qualification and further details, which were essential in understanding their choices. It aimed to detail key themes and insights derived from a survey of healthcare professionals (HCPs) specializing in reproductive medicine, specifically *in-vitro* fertilization (IVF). The collected data provides an overall idea about the different treatments and interventions used, along with participants' satisfaction levels and the challenges they faced at each stage of the process. Data on male infertility and its impact is also included, providing a comprehensive view of the IVF journey from preparation to post-procedure. Overall, the data provides valuable insights into the patient experience and potential areas for improvement within the IVF process.

The total number of participants i.e. gynaecologist/Fertility expert who have experience in management of IVF considering private practice only for IVF procedures, the total sample size is 96. The initial questions focus on gathering demographic information about the healthcare providers, including their years of experience in reproductive medicine and age range. This information helps to understand the expertise and potential generational perspectives within the respondent pool. The majority of responding HCPs have 1-10 years of experience in reproductive medicine (80%). Most respondents are within the 25-45 year age range (70.84%). The primary areas of specialization within IVF include IVF itself (96%), Egg Freezing (65%), and Fertility Preservation (37%). The majority of HCPs practice in Private Fertility Clinics (73.96%).

The participants were asked questions regarding the minimum endometrial thickness considered optimal for embryo implantation and the strategies employed to optimize endometrial thickness to explore an important factor influencing IVF success. Understanding the preferred endometrial thickness range and the strategies used to achieve it provides insights into the practices aimed at improving implantation rates. The most common optimal endometrial thickness range for embryo implantation is 7-9 mm, endorsed by 86.46% of respondents. Strategies for optimizing endometrial thickness include increased dosage or duration of ovarian stimulation (36.77%), estrogen supplementation (29.03%), and adjustments to medication protocols (25.16%).

Minimum endometrial thickness considered optimal for embryo implantation during IVF.

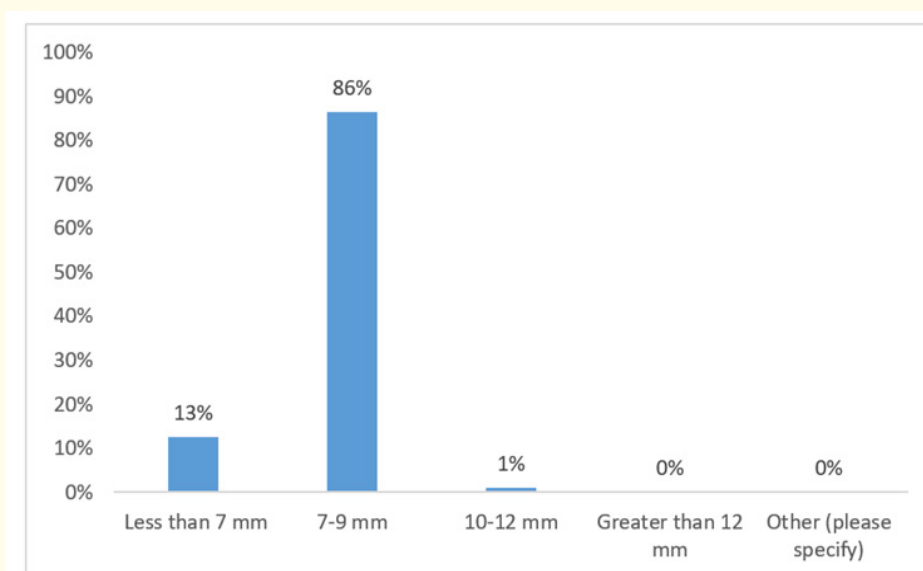


Figure 1

PCOS/PCOD in IVF

The focus shifts to PCOS/PCOD, a common condition affecting fertility. Data questions regarding the percentage of IVF patients diagnosed with PCOS/PCOD, the typical ovarian stimulation response in these patients, and the modifications made to the treatment approach provide insights into the management of this specific patient population. A significant percentage of IVF patients (43.75% - 51-75% and 40.62% - more than 75%) are diagnosed with PCOS/PCOD. Most HCPs (70.83%) report a decreased ovarian stimulation response in PCOS/PCOD patients. Treatment modifica-

tions for PCOS/PCOD patients focus on adjusting medication dosages (36.46%) and closely monitoring for ovarian hyperstimulation (63.54%). IVF success rates are perceived as lower in PCOS/PCOD patients compared to non-PCOS/PCOD patients (64.58%). While most HCPs believe their PCOS/PCOD patients are well-informed (51.04%) or moderately informed (32.29%) about the condition's impact on fertility, a significant portion (16.67%) are not well-informed.

Percentage of IVF patients diagnosed with PCOS/PCOD.

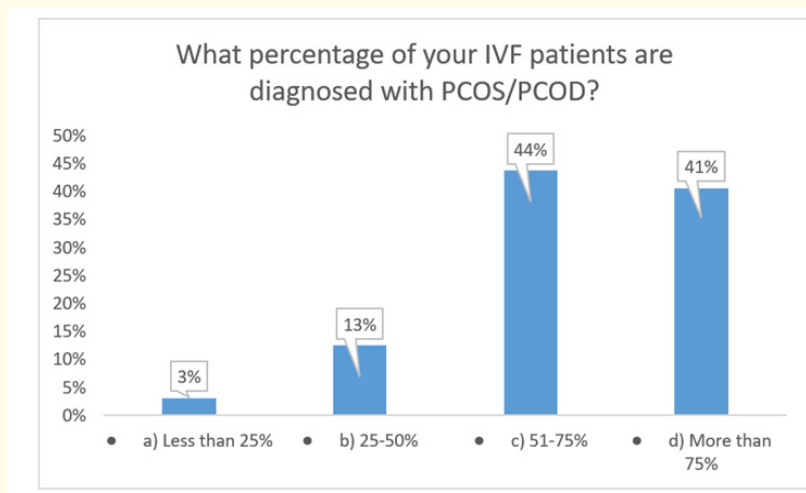


Figure 2

DHEA supplementation, perceived impact, and timing

The survey then investigates the use of DHEA supplementation in IVF, including the frequency of its recommendation, perceived impact on ovarian reserve, and typical timing of initiation. HCPs are divided on routine DHEA supplementation, with 40.62% recommending it routinely and 42.71% recommending it selectively. Perceived impact on ovarian reserve is mixed, with 38.54% reporting a positive impact, 42.71% neutral, and 15.62% negative. DHEA is typically initiated both during ovarian stimulation and prior to

IVF treatment (75%). Selection criteria for DHEA supplementation include advanced maternal age (43.75%) and diminished ovarian reserve (36.46%). The most common dosage is 50 mg three times a day for at least 3 months (43.75%). Patient feedback on DHEA is predominantly neutral (60.42%). While most HCPs consider research when incorporating DHEA (75% moderately), only 11.46% do so extensively.

Role of DHEA (dehydroepiandrosterone) supplementation in ovarian reserve optimization and IVF outcomes.

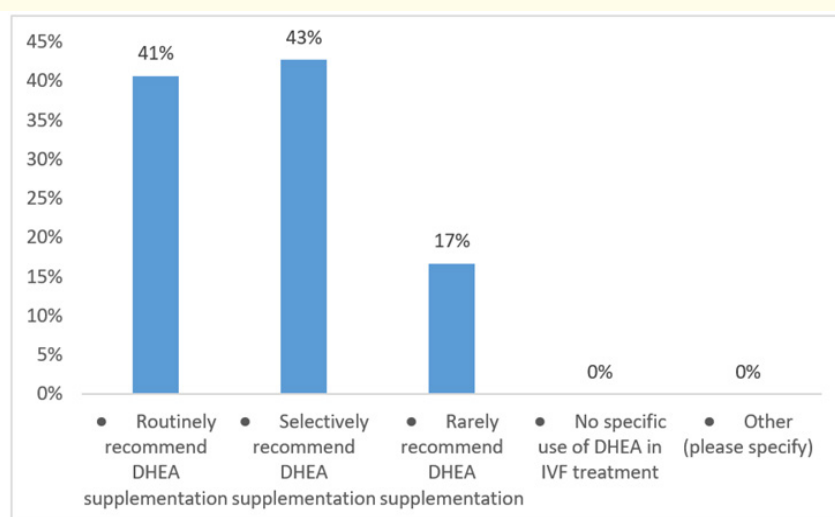


Figure 3

Male infertility and alternative medicine

Data questions about addressing male infertility in the context of IVF treatment and the consideration of alternative medicine modalities explore the management of male factor infertility and the potential integration of complementary approaches.

Diagnostic methods for male infertility include semen analysis (36.57%), hormonal testing (42.59%), and genetic testing (13.43%). Management strategies involve lifestyle modifications (34.25%), medications/supplements (28.77%), and referrals to specialists (26.94%). Collaboration with urologists or andrologists is routine for 44.79% of HCPs and occasional for another 44.79%. Education on male infertility is provided through consultations (23.33%), digital platforms (31.11%), and referrals to support services (26.67%).

Alternative medicine

“Mind-body techniques” are considered relevant by 38.54% of HCPs, followed by acupuncture (7.29%) and herbal medicine/supplements (5.21%).

While 35.42% routinely integrate alternative medicine and 64.58% do so occasionally, its role primarily focuses on stress reduction (25.11%), enhancing well-being (27.8%), and improving hormone balance (15.7%). Education on alternative medicine involves consultations (25.95%), collaboration with practitioners (33.51%), and referrals to specialized providers (22.7%). While most HCPs are supportive of the existing research on alternative medicine in IVF (60.42% strongly, 13.54% somewhat), 26.04% remain neutral.

Diagnostic methods utilized to assess male infertility.

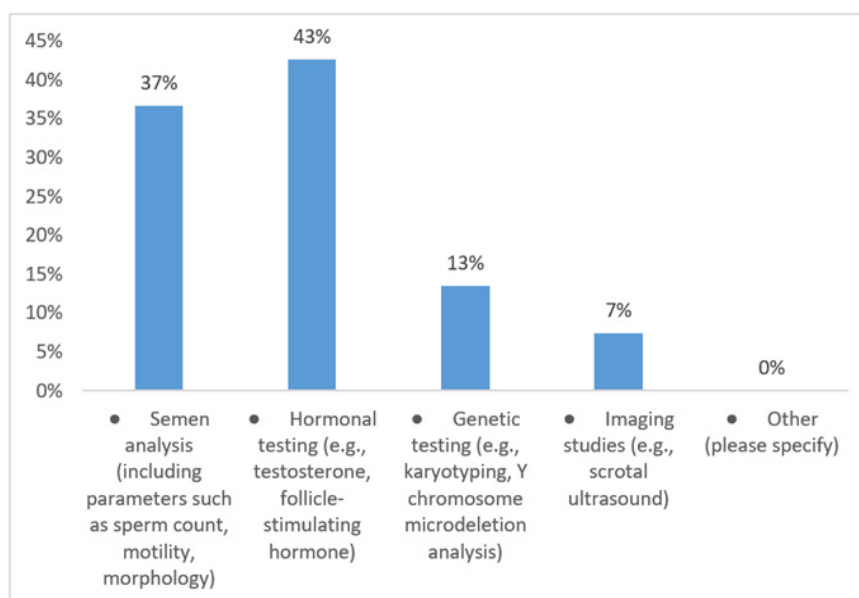


Figure 4

Discussions

This discovery aims to provide a significant advancement for improving patient treatment in the field of *in vitro* fertilization (IVF [7]). This study analyses both clinical and non-clinical aspects of fertility treatment, improving the patient care through a multi-disciplinary approach. These results highlight the significance of personalised treatment, which leads to reinterpretation of success criteria in IVF— that collectively leads to an advanced approach to reproductive medicine.

This research primarily focuses to improve methods to enhance the endometrial receptivity, which is a critical element for successful implantation. This research also explores the practical strategies that are utilized by healthcare providers (HCPs) to improve the endometrial receptivity, despite earlier studies that recognizes the importance of endometrial thickness. This study encompasses the recent advanced ovarian stimulation methods, tailor-made estrogen supplementation protocols, and also other procedures like hysteroscopy for the excision of polyps or adhesions. This

study further illustrates that the customization for each patient's physiological characteristics can result in a much more improved outcomes through these treatment options. This emphasis on the personalised variability represents an important shift from the generalized methodologies commonly referred in previous studies [8,9].

The study offers important insights on dehydroepiandrosterone (DHEA) supplementation. While the use of DHEA in the treatment of diminished ovarian reserve is documented, studies related to its effectiveness is inconsistent. This study thus provides a detailed analysis of the application of DHEA's in the IVF protocols that are needed, which pinpoints the specific areas—such as the advancing maternal age or the reducing ovarian reserve. Moreover, this research also analyses the specific timing, its dosage, and also the monitoring of DHEA application, which therefore offers a detailed analysis predominantly lacking in previous researches [10-12]. This detailed method thus provides doctors with practical insights to enhance DHEA utilization, filling a significant void in evidence-based procedures.

This study provides a thorough examination of male infertility, which is frequently overlooked in discussions centered on female causes. The research highlights the significance of addressing infertility as a collective experience by examining diagnostic procedures, treatment alternatives, and the psychological challenges encountered by male partners. It underscores the necessity for enhanced coordination among specialists, including urologists and andrologists, to formulate customized therapies for male factors. The study highlights the emotional ramifications of infertility on male partners, urging for comprehensive counseling and support programs to address the needs of both couples [13-15].

Polycystic ovarian syndrome (PCOS) and polycystic ovary disease (PCOD) pose considerable difficulties in IVF treatment owing to their intricate and multifarious characteristics. This study offers a comprehensive analysis of the management of various problems in the context of IVF [16,17]. It underscores the significance of personalized regimens, incorporating the judicious administration of drugs such as metformin and gonadotropins to enhance ovarian responsiveness while reducing the likelihood of ovarian hyperstimulation syndrome (OHSS). This study provides practitioners with explicit guidance for properly managing PCOS/PCOD patients, equipping them with practical tools to address these complications [18-20].

Conclusion

Significant contributions encompass innovative perspectives on enhancing endometrial receptivity via customized therapies, promoting the application of DHEA supplementation, and refining the management of disorders such as PCOS and PCOD. The study underscores the essential importance of lifestyle adjustments, alternative medicine strategies, and holistic care of male infertility in attaining excellent results.

The results also contest conventional success measurements in IVF, promoting a more holistic framework that encompasses emotional well-being, patient compliance with lifestyle modifications, and satisfaction with care. The research advocates for an expanded definition of success, promoting a patient-centered paradigm that perceives IVF as a transforming experience rather than merely a medical intervention.

This study establishes a basis for future progress in reproductive medicine, promoting the creation of integrated, evidence-based, and compassionate treatment approaches. These findings not only improve existing procedures but also stimulate continuous innovation, guaranteeing that IVF therapies evolve to meet the varied demands of patients.

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