ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ
ΣΧΟΛΗ ΕΠΙΣΤΗΜΩΝ ΥΓΕΙΑΣ &
ΠΡΟΝΟΙΑΣ
ΤΜΗΜΑ ΜΑΙΕΥΤΙΚΗΣ

ΠΜΣ ΠΡΟΗΓΜΕΝΗ & ΤΕΚΜΗΡΙΩΜΕΝΗ ΜΑΙΕΥΤΙΚΗ ΦΡΟΝΤΙΔΑ

Μεταπτυχιακή Διπλωματική Εργασία

«Κίνητρα γονεϊκότητας , ψυχοκοινωνικοί παράγοντες και υγεία σε γυναίκες που υποβάλλονται σε εξωσωματική γονιμοποίηση»

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Τίτλος εργασίας

Μέλη Εξεταστικής Επιτροπής συμπεριλαμβανομένου και του Εισηγητή

Η μεταπτυχιακή διπλωματική εργασία εξετάστηκε επιτυχώς από την κάτωθι Εξεταστική Επιτροπή:

Α/α	ΟΝΟΜΑ ΕΠΩΝΥΜΟ	ΒΑΘΜΙΔΑ/ΙΔΙΟΤΗΤΑ	ΨΗΦΙΑΚΗ ΥΠΟΓΡΑΦΗ
1	ΑΝΤΙΓΟΝΗ ΣΑΡΑΝΤΑΚΗ (ΕΠΙΒΛΕΠΟΥΣΑ ΚΑΘΗΓΗΤΡΙΑ)	Αναπληρώτρια Καθηγήτρια	ANTIGONI SARANTAKI Digitally signed by ANTIGONI SARANTAKI Date: 2024.10.03 09:21:12 +03'00'
2	ΜΑΡΙΑ ΔΑΓΛΑ (ΜΕΛΟΣ)	Αναπληρώτρια Καθηγήτρια	Maria Dagla Digitally signed by Maria Dagla Date: 2024.10.03 21:12:39 +03'00'
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ΔΗΛΩΣΗ ΣΥΓΓΡΑΦΕΑ ΜΕΤΑΠΤΥΧΙΑΚΗΣ ΕΡΓΑΣΙΑΣ

Η κάτωθι υπογεγραμμένη Χατζοπούλου Δήμητρα του Αντώνιου, με αριθμό μητρώου 19042 φοιτήτρια του Προγράμματος Μεταπτυχιακών Σπουδών Προηγμένη και Τεκμηριωμένη Μαιευτικής Φροντίδας του Τμήματος Μαιευτικής της Σχολής επιστημών υγείας και πρόνοιας του Πανεπιστημίου Δυτικής Αττικής, δηλώνω ότι:

«Είμαι συγγραφέας αυτής της μεταπτυχιακής εργασίας και ότι κάθε βοήθεια την οποία είχα για την προετοιμασία της, είναι πλήρως αναγνωρισμένη και αναφέρεται στην εργασία. Επίσης, οι όποιες πηγές από τις οποίες έκανα χρήση δεδομένων, ιδεών ή λέξεων, είτε ακριβώς είτε παραφρασμένες, αναφέρονται στο σύνολό τους, με πλήρη αναφορά στους συγγραφείς, τον εκδοτικό οίκο ή το περιοδικό, συμπεριλαμβανομένων και των πηγών που ενδεχομένως χρησιμοποιήθηκαν από το διαδίκτυο. Επίσης, βεβαιώνω ότι αυτή η εργασία έχει συγγραφεί από μένα αποκλειστικά και αποτελεί προϊόν πνευματικής ιδιοκτησίας τόσο δικής μου, όσο και του Ιδρύματος.

Παράβαση της ανωτέρω ακαδημαϊκής μου ευθύνης αποτελεί ουσιώδη λόγο για την ανάκληση του πτυχίου μου».

***** *Επιθυμώ την απαγόρευση πρόσβασης στο πλήρες κείμενο της εργασίας μου μέχρι 20/12/2024 και έπειτα από αίτηση μου στη Βιβλιοθήκη και έγκριση του επιβλέποντα καθηγητή.*

Η Δηλούσα

*** Ονοματεπώνυμο /Ιδιότητα**

Σαραντάκη Αντιγόνη

Αναπληρώτρια Καθηγήτρια Τμήματος Μαιευτικής

ANTIGONI SARANTAKI

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Ψηφιακή Υπογραφή Επιβλέποντα

**** Εάν κάποιος επιθυμεί απαγόρευση πρόσβασης στην εργασία για χρονικό διάστημα 6-12 μηνών (embargo), θα πρέπει να υπογράψει ψηφιακά ο/η επιβλέπων/ουσα καθηγητής/τρια, για να γνωστοποιεί ότι είναι ενημερωμένος/η και συναινεί. Οι λόγοι χρονικού αποκλεισμού πρόσβασης περιγράφονται αναλυτικά στις πολιτικές του Ι.Α. (σελ. 6):***

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Abstract

Difficulties in conceiving a child are particularly stressful issues and are particularly mentally burdening conditions not easily manageable by couples. In vitro fertilization (IVF) is amongst the most common methodologies for treating infertility. In the present paper, the motives for parenthood as well as the psychosocial and health factors of women undergoing IVF are examined through the utilization of a systematic review.

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1. Introduction

Quality of life, according to the World Health (2020) Organization, is defined as a broad spectrum that is complexly influenced by a person's physical health, mental state, personal beliefs, level of independence,v and relationship with the environment and conditions (social, economic, cultural, security, etc.) that it offers. Thus, all the problems related to the physical and mental health of the couple, adversely affect their quality of life.

Difficulties in conceiving a child are particularly stressful issues and are particularly mentally burdening conditions not easily manageable by couples. Chronic infertility can in many cases demonstrate mental exhaustion as a result of intense stress and anxiety. Feelings of guilt, shame, fear, anger and pessimism can lead to depression, adverse sexual desire, and social isolation (Mascarenhas MN, Flaxman SR, Boerma T, et al. (2012).

In vitro fertilization (IVF) is amongst the most common methodologies for treating infertility. Apart from the profound benefits of the method, it is psychologically burdening, time-consuming, invasive, requires medication, anesthesia and in accordance also a significant percentage does not lead to pregnancy and in many cases, it could be possibly traumatizing for the couple. All this results in the creation of psychological burden, stress and adverse effect on the quality of life (Qol) of the couple.

1.1 Aim

In the present paper, the motives for parenthood as well as the psychosocial and health factors of women undergoing IVF are examined through the utilization of a systematic review.

2. Literature Review

2.1 Infertility

According to the World Health Organization (WHO), infertility is a condition and is defined as the failure to conceive after 12 or more months of free sexual intercourse, ie intercourse without the use of contraceptive methods. At the same time, Kuohung et al. In a recent study (2015) defined infertility as the failure of a couple to conceive after 12 months of regular unprotected sex, in women under 35 and after 6 months in women 35 and older. Approximately 80-90% of couples wishing to conceive will achieve it within 12 months (Kuohung et al., 2015; Cousineau et al., 2007). Infertility is estimated to affect approximately 8-12% of reproductive age couples worldwide.

2.1.1 Causes of Infertility

Infertility is caused due to a female or male factor while the coexistence of both factors is estimated at 40-50%. Its frequency is almost the same in both men and women. The reasons why a couple cannot have children vary. Infertility is usually due to either inflammation of the genital system disfunction, hormonal disorders, or anatomical causes amongst others (Saridi & Georgiadi, 2010; Brugh & Lipshultz, 2004. Bhasin 2007). However, there are other factors of infertility, such as demographics that include the advanced age of childbirth that is common today, economic factors and those caused by addictions and harmful habits (such as smoking, alcohol, etc.).

2.1.2 The psychosocial & emotional effects of infertility

Most female patients experience some degree of emotional distress during treatment (Knoll, et al., 2009), with approximately 23% estimated to discontinue treatment prematurely due to stress and stress that will be felt during that period. Also, one third of patients will end treatment without achieving pregnancy, and many will have difficulty adjusting due to unfulfilled family goals

(Johansson, et al., 2010). Research has shown that many women consider infertility treatment to be the most unpleasant experience of their lives. The stress caused by infertility is associated with various factors, such as the inhibition and delay of childbearing, marital and sexual dysfunction associated with infertility, the cyclical nature of treatment, the side effects of drugs, the frustration of success rates, lack of control, ambiguity and reduced predictability of the situation.

Many women with infertility have particular difficulty managing medication, usually time-consuming diagnostic and treatment periods, and the threat of potential loss due to uncertainty about achieving pregnancy and not having a child. According to studies by Seibel and Taymor, 1982 and Zoldbrod, 1998, infertility and the problems that result from it often cause mental breakdown and are often a cause of crisis with consequences in all relationships and areas of human life. Infertile women face stress and depression, often leading to anxiety, impatience, guilt and tension, and often leading to isolation.

Individuals with fertility issues also feel anger that they express in their partner, in themselves, in their social environment (family, friends, couples with children), in their doctor or even in society at large. Women experience anxiety during the period of unsuccessful attempts to achieve pregnancy which presents a cyclical monthly course while their emotions alternate. On the one hand they hope and on the other they despair as they are affected by ovulation and menstruation which signals the non-achievement of pregnancy causing sadness and frustration.

Repetition of failure creates the feeling of possible loss. Similar feelings appear during the treatment period. Research estimates that mood (anxiety, depression or sadness) fluctuates between the sexes during a period of assisted reproduction therapy. It seems that stress and melancholy increase during the ovulation period, decrease during embryo transfer, to increase again on the day of the pregnancy test. The severity of symptoms decreases with repeated efforts

(ESHRE, 2015). On the other hand, Dunkel-Sheter and Lobel (1991) argue that there is no clear evidence to show the adverse effects of infertility and consider that the existence of a defined cycle of emotions does not exist. Many studies have linked infertility to depression.

There are many times when the work activity is reduced, while usually the relations with the colleagues are affected and possibly changes or even provoke resignation from the existing occupation. In addition, the cost of treatment and the constant visits to doctors cause financial difficulties for the couple. The treatment of infertility is often considered taboo and socially stigmatized. It is pointed out that social stigma for women who do not acquire the role of mother is more intense than for men, as a result of which women experience the social consequences of infertility to a greater extent. Numerous studies have made possible correlations between the elements of stress, depression and general well-being with cultural backgrounds that influence the above results.

2.3 Motives for Parenthood

Studying the psycho-emotional effects of infertility, reasonably raises questions about the reasons why a couple is confronted with assisted reproduction processes, experiencing several times painful and time-consuming processes until it reaches the desired result. The desire of the couple is characterized by particular intensity and complexity. Many studies focus on biological and emotional motives, while on the other hand social motives appear to be of equal importance. As according to Berg et all., (1991) some couples seek to have children in order to experience pregnancy and to fill their internal gaps (in an ad according to my perception “emotionless” approach). Bydlowski (2009) argued that the desire for pregnancy does not necessarily coincide with the desire to have a child. Many women are interested in simply experiencing pregnancy without necessarily being in the disposition to raise a child.

Social background and "peer-pressure" of having a family also influences couple's decisions. For some couples, children are considered the reason for their existence, necessary for the strengthening of their marriage in order to perpetuate their species and "name". According to Kagitcibasi (1980) couples want to have children because of emotional, psychological, social and economic reasons. Emotional and psychological reasons refer to the mental maturity they feel and the pleasure that people receive when they have a child.

Van Balen and Trimbos - Kemper (1995) concluded that the most important motivations for both sexes were prosperity and happiness. In the study by Berg et al. (1991), women scored higher on how important it is to have a child. For them, motherhood is considered important for the creation of the female identity, while many times the desire to have a child is a result of social pressure i.e., peer-pressure (Miller, 1994; van Balen & Trimbos - Kemper, 1995). In addition, for society, the female sex is associated with motherhood. Social norms and family perceptions affect the individual and the couple, who often feel pressured towards the decision to have a child as most societies consider this decision imperative. Van Balen and Trimbos - Kemper (1995) examining the motives of childless couples to have children found that social reasons were insignificant for both sexes. Also, while investigating the desire of infertile women to become mothers it was found that for some women the desire is a progressive process, while its intensity changes over time.

2.4 Assisted Reproduction

2.4.1 Historical background and Assisted Reproduction

Louise Brown's announcement of the first birth through assisted reproduction on July 25, 1978 in Lancashire, England through IVF is a milestone in the treatment of infertility. This is the first case of human birth after fertilization of the egg in vitro and its placement in the endometrial cavity. The second refers to Calcutta, India in October 1978 and again concerns a female newborn, while the third case refers to the birth of a healthy male in Edinburgh, Scotland on 14 January 1979.

2.4.2 Assisted reproduction IVF

The set of methods used to achieve pregnancy is included in the term "assisted reproduction". The most commonly used methods of assisted reproduction are insemination (IUI) and in vitro fertilization (IVF). In relation to the classic method of IVF (In Vitro Fertilization), hormones are initially administered to the woman in order to increase the number of eggs. At the appropriate time the eggs are collected under local anesthesia and their fertilization by the sperm is done (in vitro) in the laboratory, where the sperm and the eggs are mixed in a special shell and remain in ideal conditions until they are examined the next day as according to Lykeridou K., Gourounti K., Sarantaki A., Loutradis D., Vaslamatzis G., Deltsidou A., (2011). Then, 2 to 3 days after ovulation, the day of embryo transfer is organized, ie the placement of the fertilized eggs, which resulted from in vitro fertilization, in the woman's uterus. The period after the embryo transfer takes place and the woman needs to follow further medication and instructions meticulously for a couple of days. The woman can then resume her normal activity or work, unless there are other reasons and the work is not particularly burdensome. Pregnancy is documented by measuring the levels of β-chorionic gonadotropin in the blood (and not by urine pregnancy test) on the 14th day after embryo

transfer as according to Lykeridou K., Gourounti K., Sarantaki A., Loutradis D., Vaslamatzis G., Deltsidou A., (2011).

The success of this method is about 10%. To increase the chances of success, more than one embryo is usually placed, possibly resulting in multiple pregnancies. In the report of ESHRE the percentage of the desired outcome in the first attempt of IVF seems to be 26.5%. Preimplantation Genetic Diagnosis (PGD) is a relatively recent medical development combined with in vitro fertilization. PGD only affects couples who are carriers or suffer from a serious genetic disease and are at risk of passing the disease

on to their offspring. These couples in the past, after achieving pregnancy, were checked by amniocentesis in the 2nd trimester of pregnancy, and in case the fetus suffered from the disease, they terminated the pregnancy. Today, these couples can undergo a standard in vitro fertilization program and 1-2 cells can be removed from the resulting embryos. From these cells, using advanced techniques, it is possible to determine whether the specific embryo from which they were obtained is diseased or not

2.4.3 IVF assisted reproduction advantages and disadvantages

In regards to the main advantages and disadvantages the most profound ones are: **Advantages** The evolution of biomedical technology has provided solutions to couples with fertility problems. **Disadvantages** Medication, the cost of treatment and the psychological discomfort experienced in in vitro fertilization are mentioned as the main disadvantages of the method. People's trust in science is central to both the long-term success of biomedical research and the continued treatment of couples

2.4.4 Psychosocial factors and health in women undergoing IVF

A study conducted at the Washington Medical College of America in collaboration with the psychology department showed that symptoms of anxiety and depression were statistically significantly higher in women than men in their preparation. According to a study, people seeking IVF treatment are more anxious and emotionally charged compared to the general population (Lukse M.P., 1999) (Peterson BD, Newton CR, Rosen KH and Skaggs GE, 2006). Pre-existing personality is considered a determining factor and women with neurotic personality may be more vulnerable to develop depression after failure of infertility treatment (Volgsten H, 2010). An Addition Wang K et.aoll. (2007) who stated that "the personal characteristics of infertile couples (increased age, long duration of marriage) have a significant correlation with their psychological state".

3. Methodology

Systematic review is characterized by the adoption of a clearly defined research method for answering specific research questions related to accumulated knowledge / research in a specific field, thus in the present paper the utilization of the systematic review methodology takes place in order to identify the motives for parenthood as well as the psychosocial and health related factors of women undergoing IVF.

In the context of the present systematic review, an attempt is made to respond to the main research question regarding the psychosocial and health related factors of women undergoing IVF through the evaluation of current and academic bibliographical sources. In order to present the results of the review, a summary table is created that includes the researches that have been included and their categorization in the light of the focus, the research method, the results, etc.

The study was conducted through a research strategy that took into account the conditions that characterize the research question. The databases used were Google Scholar, PubMed. A manual search was also performed by checking the list of "References" of the studies included in the review. To increase search sensitivity and ensure satisfactory search retrieval, we used, in addition to controlled vocabulary, synonyms, keywords, and spelling variations. The following search terms and sequences were used: "woman psychology IVF", "IVF psychology", "IVF woman".

3.1 Eligibility criteria

To be included in the systematic review, the studies had to meet the following criteria:

Include at least one woman between the ages of 18 and 50 who has had undergone IVF.

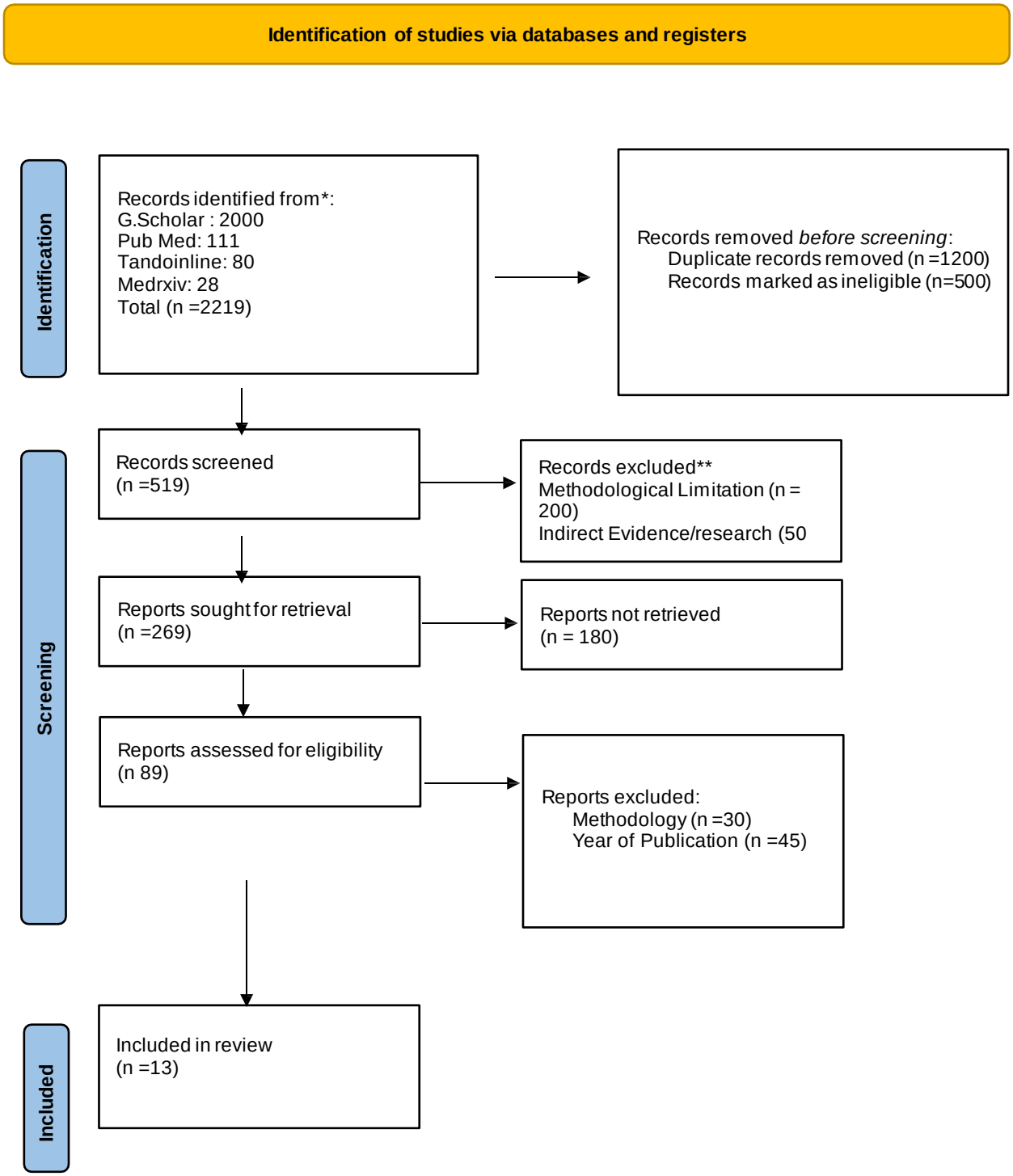
The dependent variable had to be correlated in some way with psychological effects of the procedure.

Comparative studies involving a control group.

Original research studies that provided sufficient detail on the methods and results, allowing the identification and collection of data and results.

Studies published in English, and Greek.

The factors responsible for reducing the level of evidence were: methodological limitations, inconsistency, indirect evidence, inaccuracy and bias of publication.



Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

4. Analysis

4.1 Systematic Review

Author & Date	Title	Aim	Method	# Subjects	Results	Limitations
#1 Yakupova, V.A., Zakharova, E.I., Abubakirov, A.N. (2015)	The mental state of women with an IVF pregnancy	The aim of our research was to investigate the mental state of women participating in an IVF program	Questionnaire (self-assessment of mental states)	224 pregnant women in the second and third trimester 62 women with an IVF pregnancy 62 women who conceived naturally	No significant differences were identified in mental well-being in the two groups; this finding suggests that somatic complications during pregnancy are a general source of anxiety regardless of the reason for their occurrence. The second and third trimesters of pregnancy register increased anxiety levels associated with experiences of reproductive loss and the presence of physical problems. The main resources of a woman's personality that contribute to her self-confidence and mental stability are her professional employment and flexible behavior.	All the study participants had encountered medical complications during their pregnancy
#2 Hilla Haelyon	The psychological needs of women	Research on the experiences of IVF-	Qualitative-semi-structure	30 Israeli women undergoing IVF treatment	women of the 'obeying-the-treatment-routine' category drew a clear separation between their emotional and bodily experiences,	Methodology and non evidence-based

	undergoing IVF treatment Hilla Haelyon, PhD1	treated women in Israel, and discusses the relevance of this research's findings to the bioethical debate in this respect.	d interview	for a first pregnancy aged 23 to 42	women of the 'negotiating' type re-united their body and emotions.	categorizati on
#3 Rahim et.all., (2021)	Effect of Hope-oriented group counseling on mental health of infertile women with failed IVF cycles: a randomized controlled trial	To determine the effects of hope-oriented group counseling on mental health (primary outcome) and quality of life (secondary outcome) of infertile women with failed IVF cycles.	Randomized controlled trial [participants were allocated to the intervention group (n = 30) and control group (n = 30) based on a randomiz	60 women with failed IVF cycles visiting Infertility Clinic at Al-Zahra Teaching Hospital of Tabriz- Iran	There was no significant difference between the intervention and control groups in the socio-demographic profile of participants (P > 0.05). The post-intervention mean score of stress (adjusted mean difference = − 1.7, 95% confidence interval: − 3.2 to − 0.3, P = 0.018) and depression (adjusted mean difference = − 1.3, 95% confidence interval: − 4.7 to − 1.5, P < 0.001) was significantly lower in the intervention group compared to the control. Although the mean anxiety score was lower in the intervention group compared to the control, the difference between them was not statistically significant (adjusted mean	

			ed block design]		difference = − 1.1, 95% confidence interval: − 2.6 to 0.4, *P* = 0.153). The mean score of QoL was significantly higher in the intervention group than that of the control group (adjusted mean difference = 6.9, 95% confidence interval: 5.1 to 8.8, *P* < 0.001).	
#4 Limor Dina G., (2016)	Satisfaction with in vitro fertilization treatment: patients' experiences and professionals' perceptions	To determine the atisfaction with in vitro fertilization treatment: patients' experiences and professionals' perceptions	Questionnaire SPSS statistical analysis	204 patients and 19 fertility professionals from 8 public IVF units in Israel. 142 women and 62 men, who had undergone or were currently undergoing IVF treatment.	The study found that, overall, infertile patients are satisfied with the care they received. Several demographic variables (age; education; income; number of fertility treatments) and psychological factors ('Pessimism' and 'Activeness'), were found to be significantly correlated with patient satisfaction with IVF. The results yielded a negative correlation between the WTP for IVF treatment and the satisfaction with access to care and physical conditions.	
#5 Yuan An, Zhuangzhuang Sun, Linan Li, Yajuan Zhang &	Relationship between psychological stress and reproductive outcome in women	To evaluate whether psychological stress, as well as changes in hypothalam	Prospective study	264 women undergoing IVF or intracytoplasmic sperm injection (ICSI)	The non-pregnant women reported higher anxiety and depression scores at the pregnancy detection day compared with the pregnant group. Lower levels of norepinephrine and cortisol at the time of oocyte retrieval and lower	

Hongping Ji , (2012)	undergoing in vitro fertilization treatment: Psychological and neurohormonal	us-pituitary-adrenal (HPA) axis and sympathetic nervous system (SNS) at different time points during a first in vitro fertilization (IVF) cycle, correlates with the reproductive outcome.			levels of cortisol at the time of pregnancy test were found in women with successful treatment. Significant increases in serum norepinephrine and cortisol values were observed during ovarian stimulation. State Anxiety scores were negatively correlated with live birth rate, and positively associated with serum norepinephrine and cortisol values.	
#6 David B. et all., (2021)	Psychological experience and coping strategies of patients in the Northeast US delaying care for infertility during the	The aim was to evaluate Psychological experience and coping strategies of patients in the Northeast US delaying care for infertility	Cross sectional cohort patient survey using an anonymous, self-reported, single time, web-based,	734 patients	Prior to and in anticipation of further pauses in treatment the clinical staff should consider pretreatment screening for psychological distress and provide referral sources. In addition, utilization of a patient centered approach to care should be employed.	

	COVID-19 pandemic	during the COVID-19 pandemic	HIPPA compliant platform (REDCap)			
#7 Alicja Malina 1, Julie Ann Pooley 2, (2017)	Psychological consequences of IVF fertilization	The aim is to examine IVF as a psychological issue that impacts on the functioning of individuals, couples and families.	systematic review	Studies in the English and Polish languages, peer reviewed and investigating general IVF and infertility psychological issues were included. Data was collected by the authors between June 2015-January 2016.	Experiencing IVF can be a source of psychological and emotional difficulties for couples trying to have a child. There is a need to conduct studies on the effect of supportive social interactions for the functioning of couples undergoing IVF.	
#8 Aimagambetova G., et.all., (2020)	The effect of psychological distress on IVF outcomes: Reality or	The aim was to assess psychological distress infertile females	The prospective cohort study was performed using	304 infertile females in three different cities in Kazakhstan. (average age of participants was 33.7 year)	Rates of stress, anxiety and depression among IVF patients are higher than in general population. If the level of infertility-related stress is higher, IVF success rate is lower. Findings of our study indicate the need for the specific psychological interventions for all	

	speculations ?		question naires to		infertility women, to improve IVF success rate.	
#9 Heredia A, Padilla F, Castilla JA, Garcia-Retamero R, (2020)	Effectiveness of a psychological intervention focused on stress management for women prior to IVF.	To evaluate the effectiveness of a psychological intervention focused on stress management in women who are candidates for in vitro fertilisation (IVF)	Pre-post study with two groups	Two groups of n=26	In the IG, the final evaluation reflected: (1) decreased levels of anxiety and emotional imbalance; (2) the perception of enhanced quality of life. Moreover, among the participants who received the psychological intervention and later achieved a successful IVF, the level of anxiety appeared to have decreased more strongly.	
#10 Herzberger M., (2019)	A prospective study of physiological and psychological stress in women undergoing IVF.	What are the effects of physiological and psychological stress on fertility outcomes for women undergoing IVF?	Prospective study	f 72 patients undergoing IVF in 2017 and 2018.	Salivary cortisol concentrations increased by 28% from pretreatment phase (0.46 ± 0.28 μg/dl) to maximum concentration on oocyte retrieval day (0.59 ± 0.29 μg/dl, P = 0.029) and then decreased by 29% on embryo transfer day (0.42 ± 0.23 μg/dl, P = 0.0162). On embryo transfer day, cortisol among women in their first cycle was higher than women who	

					underwent more than one treatment (P = 0.024). Stress Scale score increased by 39% from pretreatment to a maximum score on oocyte retrieval day and then decreased by 12% on embryo transfer day. Salivary cortisol and Stress Scale were not related to subsequent embryo transfer, fertilization rate, embryo quality or clinical pregnancy rate. Follicular cortisol concentration was positively correlated with fertilization rate (r = 0.4, P = 0.004).	
#11 Haemmerli Keller et.all., (2018)	Treatment-related psychological stress in different in vitro fertilization therapies with and without gonadotropin stimulation	Examination of the treatment-related psychological stress in different in vitro fertilization therapies with and without gonadotropin stimulation	Validated psychological questionnaires filled in online before, during and after completed treatment cycle(s)	57 NC-IVF and 62 cIVF patients	NC-IVF resulted in a similar overall clinical pregnancy rate than one cIVF. NC-IVF patients had a significantly lower level of depression (CES-D, 13.4 vs. 15.7, $p < 0.05$) and a higher satisfaction with the treatment (Treatment FertiQoL, 67.9 vs. 62.9, $p < 0.05$) compared with cIVF patients. The level of psychological distress increased during c-IVF treatment and decreased during NC-IVF treatment. In contrast, during NC-IVF treatment there was a significant increase in satisfaction with the treatment, whereas	

					satisfaction with treatment in the cIVF patients decreased.	
#12 Koumparou M., et all. (2021)	Stress management and In Vitro Fertilization (IVF): A pilot randomized controlled trial	The objective of the study was to evaluate the psychological effect of an intervention of 8 stress-management sessions in women undergoing in vitro fertilization (IVF)	Quantitative research with the use of questionnaires and statistical analysis Private IVF Clinic "Genesis of Athens", Medical Providence Gynecology and Surgical Anonymous Company, between	f 144 women participated in the study with 74 of them in the intervention group and 70 women in the control group	The results of our study showed that there is a positive effect of the suggested intervention on participants' mental health. This may prove beneficial for women undergoing infertility treatments, according to the literature.38,39 Specifically, there was significant decrease (p	

			01/11/2016 and 01/11/2019.			
#13 Uschi Van den Broeck 1, Thomas D'Hooghe, Paul Enzlin, Koen Demyttenaere, (2010)	Predictors of psychological distress in patients starting IVF treatment: infertility-specific versus general psychological characteristics	Asses the psychological distress in patients starting IVF treatment: infertility-specific versus general psychological characteristics	Validated self-report questionnaires that measured the concepts of the encompassing framework (personality characteristics self-criticism and dependency, attachment in the partner relations	06 women and 102 men before starting the first IVF/ICSI treatment at a university hospital-based fertility centre.	55% of the variance in psychological distress. The patients starting IVF-treatment demonstrated that general psychological characteristics, specifically active and passive coping, personality characteristics, dependency and self-criticism and intrusiveness, are more important in predicting the variability in psychological distress than infertility-specific concerns.	The cross-sectional nature of the study only allows for insight into baseline measurement (before starting the first IVF-treatment) and therefore this area of research could benefit from additional longitudinal studies.

			hip, child wish, coping, intrusiveness, infertility-related stress and general psychological distress)			

4.2 Results

The findings from Hilla Haelyon #2 in the present systematic review are interesting and could be attributed to the local beliefs, where the writer separated the sample in 1: The 'obeying-the-treatment-routine' type, and 2: The 'negotiating' type, due to the type and or method of her research. One of the interviews reported, "I taught myself not to feel any pain., in addition more individuals from the sample stated that, they silenced the feelings of embarrassment, revolt and anger experienced during the treatment. They explained this detachment as a proof of their commitment to the treatment's success. Yielding to the expression of emotions was in their eyes tantamount to disrupting the treatment's rhythm. Subduing their emotions came along with subordinating their identities to the treatment's success. Also, the statement "To me, being feminine means walking in the street with a pram" further underlining personal preference and

goals in life, thus this type of qualitative semi structured interview could not be the appropriate means of analyzing the specific subject. In conclusion the research findings of Hilla Haelyon #2 show that women of the 'obeying-the-treatment-routine' category drew a clear separation between their emotional and bodily experiences, women of the 'negotiating' type re-united their body and emotions. The latter attitude contributed to the women's sense of control over the treatment process, and helped them replace the total dependence on the medical staff (characteristic of the 'obedient' type) by a dialogue conducted with the medical staff.

Rahim et.all., (2021) #3 utilized a Depression, anxiety questionnaire and a stress scale- 21(DASS-21) and a Quality of life SF-12 questionnaire with a quantitative methodology (statistical analysis), which was amongst the most robust approaches

AS according to Limor Dina G., (2016) #4 "patients' satisfaction with medical care is increasingly acknowledged to be one of the fundamental dimensions of quality of care, and particularly so when it comes to treatment in aid of infertility" thus patient satisfaction should be taken into account in evaluating fertility treatments and other medical interventions, in order to improve the whole procedure and promote the psychological warfare of the patients.

As according to Aimagambetova G., et.all., (2020) #8, "rates of stress, anxiety and depression among IVF patients are higher than in general population". Also stated from Aimagambetova G., et.all., (2020) that findings of their study indicated the need for the specific psychological interventions for all infertility women, to improve IVF success rate.

As emphasized in the research of Heredia et.all (2020) "the IG, the final evaluation reflected: (1) decreased levels of anxiety and emotional imbalance; (2) the perception of enhanced quality of life.", and also conluded that a brief intervention focused on stress management can benefit the

psychological adjustment of women who are candidates for IVF, reducing the anxiety they may experience in this regard. However, our conclusions are based on a small sample, and so should be considered with caution.

As according to the findings of Miller et.all #10, physiological and psychological stress do not negatively affect IVF outcomes. Moreover, high follicular cortisol concentrations might have positive effects on pregnancy rates", but is still existent.

As according to Haemmerli Keller et.all., (2018), "Factors other than just pregnancy rate seem to have an impact on psychological stress in IVF treatment.", and they also added that due to reduced psychological stress in NC-IVF, this treatment could be especially considered in psychologically stressed women.

As according to the 12th research included in the present study It may be safely concluded that infertile women undergoing ART treatment who receive support, experience less psychologic consequences and maintain a better quality of life.

The study conducted from Uschi Van den Broeck 1, Thomas D'Hooghe, Paul Enzlin, Koen Demyttenaere, (2010) #13 concluded that patients starting IVF-treatment demonstrated that general psychological characteristics, specifically active and passive coping, personality characteristics, dependency and self-criticism and intrusiveness, are more important in predicting the variability in psychological distress than infertility-specific concerns.

5. Findings & Conclusion

According to Wang K et.aoll. (2007) the personal characteristics of infertile couples (increased age, long duration of marriage) have a significant correlation with their psychological state. These results are also consistent with Berg Wilson, who studied the psychological symptoms of 104 infertile couples. Also, the present study highlights that those with the longest average duration of marital relationship have a high probability of psychopathology, compared to those who do not show a probability of psychopathology. Also, according to a related study, women's age, duration of infertility, and number of IVF attempts are not associated with psychiatric disorders but personality trait factors and coping strategies are important in predicting psychiatric morbidity (Volgsten H, 2008). Currently, new research is being conducted to reduce the symptoms of stress, anxiety and depression in infertile couples. Several researches suggest the cognitive behavioural approach to help groups to reduce stress and also to help improve pregnancy rates since study showed that lower pregnancy rates with the help of IVF are related to individuals' stress (Lukse M.P., 1999). The interest of research is increasing considering that psychological symptoms of infertility can affect the positive outcome of treatment. Thus, psychological and effective support can relieve patients' anxiety, which in turn can help the outcomes of IVF treatment (Eugster, 1999). Research has concluded that psychosocial factors such as psychological distress, ineffective coping strategies, anxiety and depression contribute to a woman's decreased likelihood of childbearing (Hoffman B.M., 2007). Therefore, research is needed to further establish the effectiveness of early interventions to minimize stress caused by infertility. There is now an international consensus that assisted reproduction centres are essential to address the psychosocial and emotional issues of infertile couples. Our results support the belief that infertile couples undergoing infertility treatments need psychological counselling and supportive psychotherapy.

6. Reference

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