

An-Najah National University

Faculty of Graduate Studies

**Anxiety and Depression Symptoms among Pregnant
Women via In Vitro Fertilization Compared with
Naturally Pregnant Women Referred to Antenatal
Clinics: A Comparative Study**

By

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**This Thesis is Submitted in Partial Fulfillment of the Requirements for
the Degree of Master of Community Mental Health Nursing, Faculty of
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الاهداء

بعد مشوار طويل في طريق ملئ بالعقبات والصعوبات والتعب والالام كان زادي فيه الصبر ودعوات والداي واهلي واحبابي الحمد لله ها أنا اليوم أكملُ مرحلة البكالوريوس اسال الله العظيم أن ينفعني بما علمني ويعلمني الذي ينفعني وأن يزيد في علمي وأن ينفع بي الاسلام والمسلمين.

اهدي مشروع تخرجي هذا الى دكتور الفاضل د عدنان السرحان الذي بفضلته انجزت الكثير وتعلمت الاكثر والى والدي الغالي من كان مثلاً لي في علو الهمة والى زوجي الغالي شريك حياتي من كان نسمت فرح على قلبي وكان لي خير رفيق في هذا الطريق والى كل الأهل والاصدقاء والاصحاب.

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الإقرار

أنا الموقعة أدناه مقدمة الرسالة التي تحمل العنوان:

Anxiety and Depression Symptoms among Pregnant Women via In Vitro Fertilization Compared with Naturally Pregnant Women Referred to Antenatal Clinics: A Comparative Study

أقر بأن ما اشتملت عليه هذه الرسالة إنما نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم لنيل أية درجة علمية أو بحث علمي أو لدى أي مؤسسة تعليمية بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the Researchers' own work, and has not been submitted elsewhere for any other degree or qualification.

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List of Abbreviations

ART: Assisted Reproduction Technology

HADS: Hospital Anxiety and Depression Scale

IRB: Institutional Review Board

IVF: In Vitro Fertilization

PMOH: Palestinian Ministry of Health

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Abstract

Introduction: Pregnancy is considered a critical period in a woman's life. During this period, the woman experiences massive hormonal fluctuations, thus affecting her life physically, socially and psychologically.

Aim: The aim of this study was to assess levels of anxiety and depression among pregnant women via In Vitro Fertilization (IVF) in infertility centers during the three trimesters of pregnancy and compare them with naturally pregnant women referred to the antenatal clinics.

Method: A descriptive comparative design was used to collect data from the pregnant women who visited all private infertility centers and all Palestinian Ministry of Health (MOH)'s antenatal clinics in the West Bank.

Result :The findings have showed that pregnant women via IVF were more likely to experience anxiety and depression symptoms than naturally pregnant women (11 and 4.2 times, respectively) with significant differences (P: 0.00 and P: 0.021, respectively). In addition, the findings

have also showed that pregnant women via IVF were 14 times more likely to have anxiety or depression symptoms than naturally pregnant women with significant differences (P: 0.000).

Key words: Pregnancy; Infertility; In Vitro Fertilization (IVF); Anxiety; Depression.

Chapter One

Introduction

This chapter reviews findings of relevant literature regarding pregnancy, infertility, IVF, anxiety and depression among pregnant women in infertility centers during the three trimesters of pregnancy compared with the naturally pregnant women referred to antenatal clinics in Nablus and Ramallah, Palestine.

1.1 Background

Padubidri & Daftary (2011) explained the period from conception to birth delivery. In this period, the egg is fertilized by a sperm then implanted in the lining of the uterus, then develops in the placenta to embryo, and later in to a fetus. Pregnancy is calculated to last an average of 10 lunar months (40 weeks or 280 days). It begins from the first day of the woman's last menstrual period, and is divided into three trimesters, each lasting three months.

Moreover, a full-term pregnancy can range from 37-42 weeks, and is divided into three trimesters. Each trimester lasts between 12-14 weeks, or about three months. Also, during each trimester, the pregnant woman experiences specific hormonal and physiological change occurrences (Stickler & Watson, 2017). The first trimester is *"the time in between fertilization of the egg by the sperm (conception) and week 12 of a pregnancy"* (Cafasso, 2017). The second trimester is a period of pregnancy

which ranges from 13-27, and the third trimester *"lasts from the 28th week through to the birth of your baby"* (Stickler & Watson, 2017).

At no other time in her life does the woman experience massive hormonal fluctuations as during pregnancy. Whether it is a desired or undesired pregnancy, it is considered one of the most stressful incidents in a woman's life (Astrid et al., 2013).

Pregnancy is a stage of development and optimism for a woman although the woman in this stage is very tenuous. A psychologically healthy woman finds pregnancy as opportunity for self-realization. She uses pregnancy to diminish self-doubts about her femininity or to reassure herself that she can function as a woman. Nevertheless, some women view pregnancy as a period of an emotional crisis (Hamid, Asif & Haider, 2008).

Infertility, according to WHO (2009a) is *"a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse."*

Infertility, as a medical disorder, has both social and psychological aspects coupled with severe negative consequences that extend for a prolonged period (Schmidt, 2009). Moreover, infertility is described as a stressful event for many couples. It causes several psychological disorders such as high stress and depression, and it may significantly affect the life of infertile individuals, their treatment and follow-up (Al-Homaidan, 2011).

In addition, psychological stress can have a negative effect on individuals and the treatment plan. They experience symptoms of anxiety and/or depression. Working with anxious or depressed individuals is also a major challenge for the health-care providers (Gameiro et al., 2015).

Infertility is considered a big problem for persons wishing to form a family. Individuals or couples who suffer from infertility turn to medical assistance to help them to bring a child. This has led to an increase in the number of Assisted Reproduction Technology (ART) treatments every year (Kupka et al., 2015). Generally, pregnancy is an enjoyable event. However, despite being a positive event, it is usually associated with psychological and behavioral changes which can lead to incidence of high levels of stress among pregnant women, and in particular among pregnant women who receive ARTs (Su et al., 2011). ARTs is considered one of the risk factors that can lead to psychological problems such as anxiety and depression, among individuals who use this type of medical technique (Hjelmstedt et al., 2014).

Cooke et al. (2004) found a relationship between infertility and psychological stress. However, it is still unclear if this psychological stress continues after achieving pregnancy via ART. They also found several psychological factors which had an effect on reproductive ability, and this includes the pathophysiology of the depressed state such as increased prolactin hormone levels, disturbance of the hypothalamic-pituitary-adrenal axis function, and thyroid disruption.

Moreover, infertility can cause major psychological distress and has negative consequences such as depression, anxiety, sexual anxiety/difficulty, disturbances in relationship between couples, relationship problems with family members and friends. This is in addition to increase of the feeling of self-blame and guilt (Monach, 2005; Klock, 2004). Sejbaek et al. (2015) also found that the infertility is a severe stressor, and risk factor for incidence of depression among women. Motherhood was also found to be an important trigger of unipolar depression among pregnant women who had received treatment via ARTs.

Hoeger et al. (2013) defined IVF as a procedure that gives a married woman patient the opportunity to become pregnant using her own eggs or donor eggs and sperm from her partner or from a donor. Insemination of eggs with sperm in the laboratory, and then the fertilized egg placement (one or more embryo(s)) into the uterus are also used to support the uterine lining with hormones to permit and sustain pregnancy. This is an elective procedure designed to make the woman patient conceive when other treatments have failed or are not appropriate.

Women who experience IVF treatment had higher levels of depression and anxiety symptoms than women who attempted to become pregnant naturally, and this difference persisted over time (Vahratian et al., 2011).

Furthermore, Wichman et al. (2011) found that the psychological distress scores related to symptoms of depression, anxiety, infertility specific distress, and general perceived stress among women were higher than among men in the context of preparing for IVF. There were statistically significant differences between the two groups.

Mental health disorders such as depression and anxiety are very public incidence during pregnancy and after childbirth all over the world. It was found that there was a significant prevalence of mental health disorder during pregnancy and after childbirth in developing countries. It was about one in three to one in five women as opposed to about one in ten in developed countries (WHO, 2008).

Nierenberg (2015) argued that during any time of life a person experiences a fluctuation in his/her emotional status. Therefore, pregnancy can be considered as a form of stressor and a high risk period that may push woman to develop psychological problems such as depression and anxiety symptom. It also brings new life to the world, and this may cause problems in the family such as additional financial responsibility, distress in relationships among family members, and feelings of insecurity. This is in addition to the fear of uncertainty that comes with pregnancy. This may result in worries which lead to more psychological problems.

All new mothers may become anxious due to their new responsibilities or roles toward a new person in their life. Anxiety in response to these events is very common. Some women show excessive

worries and experience different levels of anxiety during the antenatal period. Psychological and physical factors have an important role in the progression of anxiety symptoms during pregnancy especially if it is the first child. Pregnant women experience massive hormonal changes and have worries about the health of the child, and alterations of lifestyle in their life. It was also found that when the pregnancy was unexpected or unwanted, women reported increase of level of stress and anxiety (Rubinchik et al., 2005).

Schetter (2011) described the anxiety during pregnancy as a maternal psychological disorder. He attributed this anxiety to maternal, neonatal and childbirth stages. It is associated with unwanted pregnancy consequences, like premature delivery, low birth weight, fetal distress or abnormalities of the infant such as cleft palate and pyloric stenosis (Bazr Afshan, 2004).

Moreover, severe anxiety during pregnancy leads to the damage of the relationship between the mother and her child and diminishing of the woman's ability to play the mother's role after delivery (Chan et al., 2013). There is scientific evidence that anxiety during pregnancy may not only affect pregnant woman's health but may also have an impact on labor outcomes such as preterm delivery, prolonged labor, caesarean birth, low birth weight (Catov et al., 2010; Hernandez-Martinez et al., 2011; Lobel et al., 2008; Rauchfuss & Maier, 2011).

According to WHO (2002)'s expectations, the depressive disorders will be the second leading global disease by 2020.

Pereira et al. (2010) maintained that the depressive disorder is a common illness that affects people of both genders, all ages and personal experiences all over world. Pereira et al. (2010) and WHO (2009b) found that the women were twice more likely to have depressive disorder than men. One in five women would have at least one depressive episode throughout life, and these risks would increase during the reproductive age.

In addition, Leigh and Milgrom (2008) reported that the depression in pregnancy may result in reduction of one's efficiency for self-care, including inadequate nutrition, drug or alcohol abuse and poor antenatal follow up in clinic. All of these combined may affect physical and mental health of the pregnant woman and the fetus development.

Schetter and Tanner (2012) argued that the development of anxiety, depression, and stress symptoms during pregnancy would make them risk factors which would have negative effects on mothers and their children's life. Anxiety symptoms among women during pregnancy period is also associated with shorter gestation, thus causing negative effects on fetal neurodevelopment and child outcomes. Development of depression symptoms is associated with lower birth weight infants with consequences on infant development. Alder et al. (2007) reported that the depressive

symptoms during pregnancy may have destructive outcomes for both the pregnant woman, her children, and her family.

Generalized anxiety disorder, according to DSM-5, was described by American Psychiatric Association (2013) as a mood disorder which is characterized by extravagant anxiety and worry about a number of events or activities which occur more days than not for at least 6 months and is clearly excessive. Other symptoms include having difficulty in controlling worry, disturbance in social, occupational, or other important areas, restlessness, decreased energy, impaired concentration and poor memory, insomnia, appetite changes, and thoughts of committing suicide. All this disturbance is not attributable to the physiological effects of a substance or medical condition.

Major depressive disorder, according to DSM-5, was also described by American Psychiatric Association (2013) as a mood disorder. The individual must have five or more of the following symptoms, and experience them at least once a day for a period of more than two weeks and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood most of the day, nearly every day, or (2) markedly loss of interest or pleasure in activities all or most of the day, nearly every day. Other symptoms include significant weight changes due to appetite changes, insomnia or hypersomnia, psychomotor agitation or retardation, decreased energy, feelings of worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, recurrent suicidal thought, and disturbance in social, occupational, or other

important areas. All this disturbance is not attributed to the physiological effects of a substance or medical condition.

1.3 Significance of the Study

Assessment of anxiety and depression symptoms among pregnant women via IVF and naturally pregnant women is very important. Examining and identifying those issues can help the authorities concerned and decision makers to take effective steps in early intervention to reduce anxiety and depression symptoms among all pregnant women because of their side effects on both the mothers and their children. This is in addition to the need for a plan to control the factors that lead to the increase of anxiety and depression symptoms among pregnant women. Moreover, an effective plan can be developed to enhance the mental health of women in Palestine.

1.4 Statement of the Problem

Pregnancy period is one of the most critical experiences in women's lives. It causes fluctuations in all aspects of their life. Also, women experience changes in their body over the life span. These include menstruation, pregnancy, and menopause. These frequent changes can lead to anxiety and depression, considered as normal human response to life problems. However, they could become mental health disorders if the responses were overstated, thus causing destruction of daily life function. Likewise, infertility can also lead to many problems in a couple's relationship and leave negative psychological consequences. Against this

background, this study endeavors to assess anxiety and depression symptoms among pregnant women via IVF in infertility centers, during the three trimesters of pregnancy, and compare them with those symptoms of naturally pregnant women referred to antenatal clinics.

1.5 Aim of Study

The aim of this study was to assess anxiety and depression symptoms among pregnant women via IVF in infertility centers during the three trimesters of pregnancy in comparison with naturally pregnant women referred to antenatal clinics in Nablus and Ramallah governmental clinics and nongovernmental clinics.

1.6 Research Objectives

- 1) To assess anxiety and depression symptoms among pregnant women via IVF during the three trimesters of pregnancy in infertility centers in the towns of Nablus and Ramallah.
- 2) To assess anxiety and depression symptoms among naturally pregnant women during the three trimesters of pregnancy referred to antenatal governmental clinics in Nablus and Ramallah .
- 3) To compare anxiety and depression symptoms among pregnant women via IVF in infertility centers, during the three trimesters of pregnancy, with those of naturally pregnant women.

4) To assess the relationship between the socio-demographic characteristics and anxiety and depression among IVF pregnant women and naturally pregnant women.

1.7 Research Questions

1) What is the extent of anxiety and depression symptoms among pregnant women via IVF in infertility centers, during the three trimesters of pregnancy, in Nablus and Ramallah ?

2) What is the extent of anxiety and depression symptoms among naturally pregnant women during the three trimesters of pregnancy in antenatal clinics in Nablus and Ramallah ?

3) What are the differences in the prevalence of anxiety and depression symptoms among pregnant women via IVF in infertility centers, during the three trimesters of pregnancy, when compared with naturally pregnant women in antenatal clinics in Nablus and Ramallah ?

4) What is the extent of the relationship between the socio-demographic characteristics and anxiety and depression among IVF pregnant women and naturally pregnant women?

1.8 Hypotheses

1) There is no significant difference in the extent of anxiety and depression symptoms among pregnant women via IVF in fertility centers, during the three trimester of pregnancy, in Nablus and Ramallah.

2) There is no significant difference in the extent of anxiety and depression symptoms among the naturally pregnant women, during the three trimesters of pregnancy, referred to antenatal clinics in Nablus and Ramallah .

3) There is no significant difference in the extent of anxiety and depression symptoms among pregnant women via IVF in infertility centers, during the three trimesters of pregnancy, when compared with the naturally pregnant women in antenatal clinics in Nablus and Ramallah.

4) There is no significant difference in the extent of the relationship between the socio-demographic characteristics and the anxiety and depression among IVF pregnant women and naturally pregnant women

1.9 Variables

1.9.1 Dependent variables:

- ✓ Anxiety
- ✓ Depression

1.9.2 Independent Variables:

- ✓ Pregnant women via IVF infertility centers during the three trimesters of pregnancy.
- ✓ Naturally pregnant women in antenatal clinics during the three trimesters of pregnancy and other demographic variables: city, name of fertility center and antenatal clinic, age of couple, religion of couple, level

of education of couple, work of couple, smoking/non-smoking couple, the woman taking medicine or not during pregnancy (eg, folic acid and vitamins), history of chronic disease among women, number of pregnancies/birth/miscarriages, the woman exposed to previous health complications due to pregnancy, health complications in the current pregnancy, method of birth (normal delivery or has history of caesarean section), number of infertility years, cause of infertility, number of fertilization times, number of times fertilization has succeeded, current pregnancy desirable and planned, current gestational age, women's reception of psychological support inside or outside the clinics or fertility centers, pressure from the family for not getting pregnant, previous marriages of woman, average monthly income of the family and type of health insurance if any.

Chapter Two

Literature Review

A number of studies have been conducted in different countries worldwide. All articles reviewed in this chapter were found, using the electronic search engines such as Google Scholar, Pubmed, and Hinari. The key words (pregnancy, In Vitro Fertilization (IVF), infertility, anxiety, and depression) were used in the googling process. The available articles are about anxiety and depression among pregnant women via IVF and naturally pregnant women. All sources but two were published between 2008 and 2017. These two articles were published in 1999 and 2000 and were used due to their relevance to the topic of this study.

Silva et al. (2017) examined anxiety in pregnancy in Brazil to evaluate the incidence of anxiety among pregnant women and the associated factors; they compared the occurrence of anxiety in each gestational trimester. Results of their study showed that 26.8% of pregnant women experienced incidence of anxiety. They also found that 42.9% of pregnant women had more recurrent anxiety in the third trimester.

In another study, Silva et al. (2016) evaluated the incidence of depression among pregnant women and the associated factors in Alfenas, Brazil. It was found that 14.8% of pregnant women reported depression in the first trimester. This depression became more common during the second trimester of pregnancy. In addition, the study revealed a significant relationship between depression during pregnancy and various factors such

as number of births, number of children, number of pregnancies, family support, amount of cigarettes smoked per day, consumption of alcohol, use of daily medications, history of mental disorder, presence of striking events in the last 12 months and history of domestic violence.

Bisetegen et al. (2016) studied the prevalence and predictors of depression among pregnant women. The aim of the study was to find out the prevalence of antenatal depression and identify its associated factors. The sample of the study was 527 pregnant women. Results indicated that the prevalence of antenatal depression was high (11.8%). Prevalence rates in the first, second, and third trimesters were 9.2%, 7.4%, and 15.5% respectively. Poverty, unmet reproductive health needs, and obstetric complications, such as debt, unplanned pregnancy, history of stillbirth, history of abortion, being in the third trimester of pregnancy, presence of a complication in the current pregnancy, and previous history of depression are the main determinants of antenatal depression.

In India, Ajinkya et al. (2013) explored the prevalence of depression among pregnant women in Navi-Mumbai and the associated obstetric risk factors. The study sample included 185 naturally pregnant women. Results found that the prevalence of depression among pregnant women was found to be 9.18%. It was also found that the obstetric risk factors were significantly behind depression during pregnancy. These factors included multigravidas, unexpected pregnancy, pregnant women with obstetric complications, history of previous abortions, and past history of obstetric complications.

Chan et al. (2013) also studied the prevalence of antenatal anxiety symptoms in early pregnancy and depressive symptoms in later pregnancy and early postpartum period in Hong Kong. They administered the Hospital Anxiety and Depression Scale (HADS) . Results showed that 17.7% of pregnant women in the first trimester of pregnancy had anxiety symptoms. High levels of anxiety symptoms were reported among single mothers, younger mothers, mothers who smoked before pregnancy and mothers who received low education level with significant differences. In addition, it was also found that the undesirable pregnancy, low self-esteem, low marital satisfaction and poor social support received were main psychosocial risk factors behind development of anxiety symptoms among pregnant women in the first trimester with significant differences. Moreover, the study revealed that anxiety symptoms in the first trimester were predictors of development of anxiety symptoms in the third trimester. However, anxiety and depressive symptoms in the first trimester were not significantly predicted in 6 weeks postpartum.

Verbeek et al. (2015) investigated the prevalence and severity of anxiety and depression among pregnant women as well as the availability of mental health care in a developing country (Nicaragua) in comparison with a developed country (the Netherlands). The sample of study included 98 pregnant women in Nicaragua who were compared with 4, 725 pregnant women in the Netherlands. The results revealed that the prevalence of anxiety and depression symptoms among Nicaraguan women was 41% and 57% respectively as opposed to 15% and 6% among Dutch women

respectively. Furthermore, 9.6 % of the women reported that a professional psychological support was available for the Nicaraguan pregnant women, which was associated with an increased anxiety.

Karmalianie et al. (2009) documented the prevalence of anxiety and depression symptoms among pregnant women in Pakistan. The study sample, which included 1,368 women at 20-26 weeks of gestation, found that anxiety and/or depression was prevalent among 18% of pregnant women. It was also found that the main factors associated with occurred psychological distress were husband's unemployment, lower household resources, having 10 or more years of formal education, a first and an undesirable pregnancy. In addition, the strongest factors associated with the development of depression and/or anxiety symptoms were due to physical/sexual and verbal abuse. Depression and/or anxiety symptoms were found prevalent among 42% women who were physically and/or sexually abused. It was also found that these symptoms were prevalent among 23% of those who were subjected to verbal abuse as opposed to 8% of women who were not abused.

Ali et al. (2012) examined the frequency of anxiety and/or depression among pregnant women in antepartum in Karachi, Pakistan. This study included 165 naturally pregnant women at a tertiary care hospital. It reported that 70% of pregnant women had anxiety and/or depression.

Nasreen et al. (2011) documented the prevalence of antepartum depression and anxiety among pregnant Bangladesh women and the factors associated with them. The sample included 720 women in their third trimester of pregnancy. The study showed that depressive symptoms were prevalent among 18% of pregnant women while anxiety symptoms were prevalent among 29% of pregnant women. It was also found that the associated factors behind antepartum anxiety symptom were illiteracy, poor household economy, lack of practical support, intimate partner violence, violence during pregnancy, and interaction between poor household economy and poor partner relationship.

Hamid et al. (2008) explored the prevalence of anxiety and depression symptoms among pregnant women. The sample included 100 pregnant women selected randomly from Pakistan's Fatima Memorial Hospital's obstetric clinic. The control group (100) was selected randomly from non-pregnant women who matched on age, education, marital status and monthly income. Results found that anxiety was prevalent among 39% of pregnant women while depression was prevalent among 18% of them. In contrast, anxiety was found to be prevalent among 28% of non-pregnant women (control group) while depression was prevalent among 12%. Significant differences were found between the two groups. It was also found that 17% of pregnant women had received psychiatric (pharmacological or psychotherapy) treatment.

Al-Homaidan (2011) also documented the prevalence of and influencing factors behind depressive symptoms among the infertile women compared to fertile women at King Abdulaziz Medical City (KAMC) in the Kingdom of Saudi Arabia. Results indicated that 53.8% of the infertile women and 37.2% of the fertile women had depression. There were also significant differences between them. The infertile women, however, were more severely depressed. In addition, it was found that the infertile women who were subjected to pressure from family members for not getting pregnant were more depressed than those who had no such pressure.

The prevalence of anxiety and depression and their related factors among Iranian infertile patients was also investigated by Maroufizadeh et al. (2017). The cross-sectional study included 1,128 infertile patients (479 men and 649 women). Results revealed that 49.6% of infertile women patients experienced anxiety while 33.0% experienced depression. Moreover, it was found that the females were 2.26 times more likely to have anxiety symptoms than males. However, depression rate was not attributed to sex. In addition, patients with 5 years infertility duration were more likely than others to have anxiety and depressive symptoms.

Hashemieh et al. (2013) conducted an assessment of anxiety level among pregnant Iranian women and its relationship with infertility factors in women who got pregnant through ARTs. Results showed that anxiety was prevalent among 34% of women. Other women were found to have moderate and severe levels of anxiety. Also, it was found that there was

a significant relationship between infertility duration, history of treatment failure and anxiety level. In addition, the infertility duration and history of treatment failure in ARTs pregnant women were found to be the major factors behind the anxiety level during pregnancy period.

Joelsson et al. (2017) compared the prevalence of anxiety and depressive symptoms among women seeking infertility treatment and women who were naturally pregnant or became pregnant after ART. The Hospital Anxiety and Depression Scale (HADS) and Edinburgh Postnatal Depression Scale (EPDS) were used. It was found that anxiety and depression symptoms were prevalent among 57.6% of sub-fertile and 15.7% of non-pregnant women. In contrast, 21.1% of pregnant women who received ART showed anxiety symptoms while 8.5% experienced depressive symptoms. About 18.8% of naturally pregnant women reported suffering from anxiety as opposed to 10.3% who had depression symptoms. In addition, it was found that the development of anxiety and depression symptoms was associated with the presence of at least one unhealthy lifestyle behavior such as daily tobacco smoking, weekly alcohol consumption, BMI-25, and regular physical exercise < 2 h/week. However, there were no differences in anxiety and depression symptoms between pregnant women who received ART and naturally pregnant women.

Klock and Greenfeld (2000) conducted a study to find out if there were psychological differences between pregnant women via IVF and naturally pregnant women in the USA. The study included 74 women who became pregnant via IVF and 40 naturally pregnant women at 12-28

weeks' gestational age. Major results showed that there were no psychological differences between pregnant women via IVF and naturally pregnant women on the domains of self-esteem, depression and anxiety symptoms. However, differences were found on specific domain: assessing the rewards and concerns of pregnancy. In addition, within-group, changes over time indicated that pregnant women via IVF had an increase in self-esteem and a decrease in anxiety during pregnancy.

Eugster and Vingerhoets (1999) assessed the psychological reactions of women and their partners before and during entering the IVF-procedure and after both unsuccessful and successful IVF procedures. Results showed that anxiety and depression were common reactions among women and men who experienced waiting for the outcome of the IVF-treatment and an unsuccessful IVF. However, after an unsuccessful IVF, feelings of sadness, depression and anger were the common reactions of both men and women. In addition, after a successful IVF-treatment, IVF-parents experienced more stress during pregnancy than 'normal fertile' parents. Further, it was found that the relationship between mothers who had children via IVF procedure and their children was much better than that of the mothers with naturally conceived children. Finally, the results revealed that the psychosocial factors, such as ineffective coping strategies, anxiety and/or depression, were associated with a lower pregnancy rate following IVF-procedures.

Regardless of the method of pregnancy, it can be concluded that the various levels and degrees of anxiety and depression symptoms were found to be common among pregnant women (natural and IVF). As we have seen, no studies have been conducted in Palestine on anxiety and depression symptoms among pregnant women and infertile women and the risk factors behind them.

Chapter Three

Methods

Introduction

This chapter describes the methodology used to carry out this study. This includes the study design, setting and site, population of the study, sample size and sampling method, eligibility criteria, data collection tools, validity and reliability, ethical considerations, fieldwork preparation, scoring system and data analysis.

3.1 Design

A descriptive comparative study design was used to achieve the aim of the study: assessment of the anxiety and depression symptoms among pregnant women via (IVF) in infertility centers, during three trimesters of pregnancy, compared with the naturally pregnant women referred to antenatal clinics in Nablus and Ramallah.

3.2 Sampling Method

A convenience sampling method was used to select pregnant women via (IVF) in infertility centers in Nablus and Ramallah.

We mean by convenience the availability of the sample during data collection period.

Also, the convenience sampling method was used to select naturally pregnant women from the antenatal clinics of Palestinian Ministry of Health in Nablus and Ramallah .

Any IVF pregnant woman or naturally pregnant woman was included. The control group selected outnumbered IVF pregnant group.

3.3 Study Population

The study population included all pregnant women via IVF who received antenatal care from the infertility centers in Nablus and Ramallah. It also included all naturally pregnant women who received antenatal care at governmental antenatal clinics in Nablus and Ramallah.

Table 3.1: Distribution of study population according to city and IVF center.

Categories	Natural pregnancy		IVF		Total
Nablus	160		80		240
Ramallah	50		25		75
Total	210		105		315
	Razan Center/ Nablus	Razan Center/ Ramallah	Shunnar Center	Dima Center	Total
IVF	31	25	20	29	105

3.4 Setting and Sites

The setting of data collection was all infertility centers in Nablus and Ramallah: Razan Medical Center for Infertility, Shunnar IVF Center, Dima IVF Center, Center for the Treatment of Infertility and Ectopic Fertilization of Najah National University Hospital. In addition, normal

pregnant women were selected from governmental antenatal clinics in Nablus and Ramallah.

3.5 Criteria for Selection

3.5.1 Inclusion Criteria

- All pregnant women during first, second or third trimesters of pregnancy regardless of method of pregnancy (IVF or natural pregnancy)
- All pregnant women who had a history of normal delivery or caesarean section.

3.5.2 Exclusion Criteria

- All pregnant women who had a history of mental disorder.
- All pregnant women who had a history of chronic diseases.

3.6 Tools of Data Collection

A self-report questionnaire was administered to collect the data. It consisted of two parts (**Annex 1**):

➤ Part one: Socio-demographic data

➤ This part covered the following items; city, name of fertility center and antenatal clinic, age of couple, religion of couple, level of education of couple, work of couple, smoking/non-smoking partner, the woman taking medicine or not during pregnancy (eg, folic acid and vitamins), history of chronic disease among women, number of pregnancies/birth/miscarriages,

the woman's exposure to previous health complications due to pregnancy, health complications in the current pregnancy, method of birth (normal delivery or had history of caesarean section), number of infertility years, cause of infertility, number of fertilization times, number of times fertilization has succeeded, current pregnancy desirable and planned, current gestational age, women's reception of psychological support inside or outside the clinics or fertility centers, pressure from the family for not getting pregnant, previous marriages of woman, average monthly income of the family and type of health insurance if any.

➤ Part two: **Hospital Anxiety and Depression Scale (HADS).**

➤ Developed by Zigmond and Snaith (1983) to detect symptoms of depression, and anxiety, this self-assessment scale consists of eight questions related to depression and another eight related to anxiety. Each item on the questionnaire is scored from 0-3 and this means that a person can score between 0 and 21 for either anxiety or depression, total score: (0-7=Normal case, 8-10=Borderline case, 11-21= Abnormal case).

The title, "the Hospital Anxiety and Depression Scale" (HADS), indicates that it is only valid in a hospital setting but a lot of research carried out all over the world has showed that it is valid when used in community settings and primary care medical practice (Snaith, 2003). In addition, HADS has proved its effectiveness because of its ability to estimate the symptom severity and cases of anxiety disorders and

depression in both somatic, psychiatric and primary care patients and in the common population (Bjelland et al., 2002) (see Annex 1).

3.7 Validity and Reliability

Zigmond and Snaith (1983) concluded that the HADS is *"a self-assessment scale has been developed and found to be a reliable instrument for detecting states of depression and anxiety in the setting of an hospital medical outpatient clinic. The anxiety and depressive subscales are also valid measures of severity of the emotional disorder. It is suggested that the introduction of the scales into general hospital practice would facilitate the large task of detection and management of emotional disorder in patients under investigation and treatment in medical and surgical departments"*.

The HADS has been used in many studies worldwide, and it has been translated into many languages such as German, Swedish, Chinese, French, Dutch, Portuguese, Persian and Arabic. In addition, the Arabic version has been administered by Arab countries such as Saudi Arabia, Kuwait, and the United Arab Emirates. It has also been administered in many primary and secondary health care settings (Al -Aseri et al., 2015).

The Arabic version of HADS was used in a study carried out in primary health care facility in Al -Ain, the United Arab Emirates. It was found that Spearman's rank correlation coefficients of all items of the scale were significantly above zero. The butterflies' items of the anxiety subscale had the lowest correlation coefficients. The overall Cronbach alpha

measures of internal consistency were 0.7836 for anxiety and 0.8760 for depression (El-Rufaie & Absood, 1995).

3.8 Ethical Consideration

This study has got the approval of the Community Mental Health Program committee and the Institutional Review Board (IRB) of An-Najah National University before initiation of the study (Annex 2). Permission was also obtained from Palestinian Ministry of Health (MOH) (Annex 3) and the managers of infertility centers (Annex 4). Pertaining to the participants in the study, a consent form was signed prior to the administration of the questionnaire (Annex 5). Also, full information was given to the participants concerning the purposes of the study, and they were given the right to refuse to participate in the study, or withdraw at any time.

3.9 Data Collection Process

The questionnaire was administered to the participants between June 20, 2018 and August 20, 2018, (3 weeks in Nablus and one week in Ramallah). The total number of administered questionnaires was 315.

The objectives of study were discussed with the managers of IVF centers, antenatal clinics managers and the participants in both settings (Nablus and Ramallah). In addition, clear instructions were given to the participants in Nablus and Ramallah to complete the consent forms and

questionnaires and they had the right to refuse to participate, or withdraw at any time.

The questionnaire was used to collect the information from the participants (Nablus and Ramallah) in face-to-face sessions. Interviews with participants were conducted in infertility centers for pregnant women via IVF and antenatal clinics for naturally pregnant women. Completion of the questionnaire was voluntary. The data was collected by guided self-administered questionnaire. The time taken by the participants to complete the questionnaire was around 10 minutes. The questionnaires were collected on the same day.

About 10 women refused to participate in the study from both settings (Nablus and Ramallah). These included women who were pregnant via IVF and whose infertility problem was considered very sensitive issue for them.

The Najah National University Hospital Center for the Treatment of Infertility and Ectopic Fertilization was excluded from the study because it was in the early stages of work, and there were no IVF cases at time of administration of questionnaire.

3.10 Statistical Analysis

After its collection, the data was analyzed, using Statistical Package for Social Sciences program (SPSS) including frequencies and percentages test to provide answers to the questions of the distribution of the

participants according to their socio-demographic characteristics and prevalence of anxiety and depression symptoms among IVF pregnant women and naturally pregnant women. Moreover, the chi-squared test was used to determine whether there was a significant difference between the variables and the observed frequencies in one or more items.

Chapter Four

Results

This chapter presents the findings of the study in the form of frequencies and percentages. Data was analyzed by using Statistical Package for Social Sciences program (SPSS) and the chi-squared test to provide answers to the questions of the study.

Distribution of the participants according to their socio-demographic characteristics

Table 4.1 shows the distribution of a total of 315 participants according to their socio-demographic characteristics. It shows that the sample was made up of 66.7% of naturally pregnant women and 33.3% of IVF pregnant women. It also indicates that more than two-thirds (85.1%) of the participants were between 18-35 years old. Pertaining to level of education of participants 44.8% had high school while 49.8% had university education. Furthermore, 78.1% of the participants were unemployed. About 88.3% of their families had an average monthly income of more than \$400. In addition, nearly half of participants (44.8%) had governmental health insurance. About 90.2% of the participants were not smokers but 70.8% of their husbands were cigarette smokers. Furthermore, most of them 97.1% were taking medication during pregnancy (e.g., folic acid and vitamins) and 93.7% of them did not have any chronic diseases, and 85.1% experienced no health complications in the current pregnancy. In addition, the table shows that 23.2% of IVF

pregnant women had 2-3 years of infertility. The cause of infertility of twenty percent of them was unknown. Moreover, nearly most of participants (92.1%) reported that their current pregnancy was planned as opposed to 69.2% who said that the pregnancy was desirable. Furthermore, half of participants (50.5%) received psychological support, and 28.6% of them were exposed to pressure from their families for failing to get pregnant.

Table 4-1: Distribution of participants according to their socio-demographic characteristics

Items	Variables	NO (%)
City	Nablus	240 (76.2%)
	Ramallah	75 (23.8%)
IVF pregnant women	Razan	56 (17.8%)
	Shinnar	20 (6.3%)
	Dima	29 (9.2%)
Naturally pregnant women	Nablus	240 (76.2%)
	Ramallah	75 (23.8%)
Age of woman	below 18	4 (1.3%)
	18-35	268 (85.1%)
	more than 35	43 (13.7%)
Level of education for woman	Primary	17 (5.4%)
	Secondary	141 (44.8%)
	College	157 (49.8%)
Work of woman	Employed	69 (21.9%)
	Unemployed	246 (78.1%)
Age of husband	less than 20	1 (0.3%)
	20-35	239 (75.9%)
	more than 35	75 (23.8%)
Husband's level of education	Primary	45 (14.3%)
	Secondary	138 (43.8%)
	College	132 (41.9%)
Work of husband	Worker	149 (47.3%)
	Employed	147 (46.7%)
	Trader	17 (5.4%)
	Unemployed	2 (0.6%)
Average monthly income of family	Less than \$400	37 (11.7%)
	more than \$1,400	278 (88.3%)
Type of health insurance	Government insurance	141 (44.8%)
	Private insurance	57 (18.1%)
	Social insurance	14 (4.4%)
	No insurance	103 (32.7%)

Cigarette smoking woman	None	284 (90.2%)
	Yes	31 (9.8%)
Cigarette smoking husband	None	92 (29.2%)
	Yes	223 (70.8%)
Taking medication during pregnancy (e. g, folic acid and vitamins)	None	9 (2.9%)
	Yes	306 (97.1%)
Woman's chronic diseases	None	295 (93.7%)
	Yes	20 (6.3%)
Number of previous pregnancies	None	83 (26.3%)
	1-5	214 (67.9%)
	more than 5	18 (5.7%)
Number of alive births	None	122 (38.7%)
	1-5	181 (57.5%)
	more than 5	12 (3.8%)
Number of miscarriages or abortion	None	243 (77.1%)
	1-3	69 (21.9%)
	more than 3	3 (1.0%)
Previous health complications due to previous pregnancy	Yes	28 (8.9%)
	None	206 (65.4%)
	first pregnancy	81 (25.7%)
Health complications in the current pregnancy	None	268 (85.1%)
	Yes	47 (14.9%)
Method of previous birth	Natural	105 (33.3%)
	Cesarean section	86 (27.3%)
	No previous birth	124 (39.4%)
Number of infertility years	2-5	73 (23.2%)
	more than 5	32 (10.2%)
Cause of infertility	Husband	21 (6.7%)
	Wife	21 (6.7%)
	Unknown	63 (20.0%)
Number of previous IVF fertilization	First trial	45 (14.3%)
	2-5	60 (19.0%)
Number of previous IVF fertilization has succeeded	None	71 (22.5%)
	1-3	34 (10.8%)
Current pregnancy planned	No	25 (7.9%)
	Yes	290 (92.1%)
Current pregnancy desirable	No	97 (30.8%)
	Yes	218 (69.2%)
Current gestational age	12 weeks or less	86 (27.3%)
	13-27	114 (36.2%)
	28 and more	115 (36.5%)
Women received psychological support	None	159 (50.5%)
	Yes	156 (49.5%)
Pressure from the family for failing get pregnant	None	225 (71.4%)
	Yes	90 (28.6%)
Previous marriages of woman	None	308 (97.8%)
	Yes	7 (2.2%)
Previous marriages of husband	None	287 (91.1%)
	Yes	28 (8.9%)
Number of marriage years	1-3	86 (27.3%)
	4-6	96 (30.5%)
	More than 6	133 (42.2%)
Age of woman when married	Less than 18	23 (7.3%)
	18-35	287 (91.1%)
	More than 35	5 (1.6%)

Prevalence of anxiety and depression symptoms among naturally pregnant women compared with IVF pregnant women

Table 4-2 illustrates the prevalence of anxiety symptoms among naturally pregnant women. As the table shows, 51.1% of the naturally pregnant women experienced anxiety as opposed to 48.9% of IVF pregnant women. The result shows a significant difference between naturally pregnant women and IVF pregnant women (P: 0.01). This indicates that the naturally pregnant women were more likely to experience anxiety symptoms than IVF pregnant women.

Table 4.2: Prevalence of anxiety symptoms among naturally pregnant women compared with IVF pregnant women.

		Anxiety		Total	Chi	P. value
		No	Yes			
Natural	Count	165	45	210	13.25 4	0.01
	% within anxiety	72.7%	51.1%	66.7%		
IVF	Count	62	43	105		
	% within anxiety	27.3%	48.9%	33.3%		
Total	Count	227	88	315		
	% within anxiety	100.0 %	100.0 %	100.0 %		

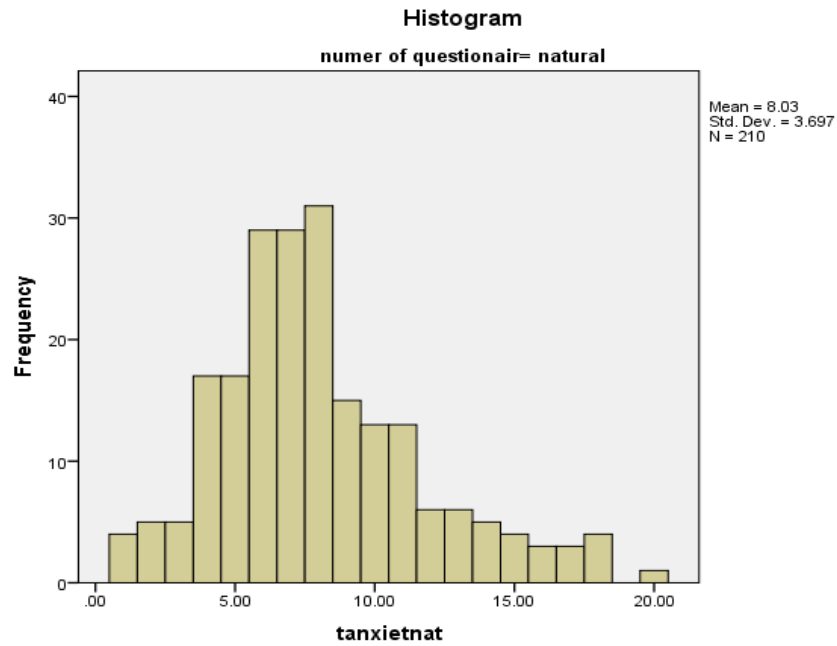


Figure 4-1: Anxiety among naturally pregnant women.

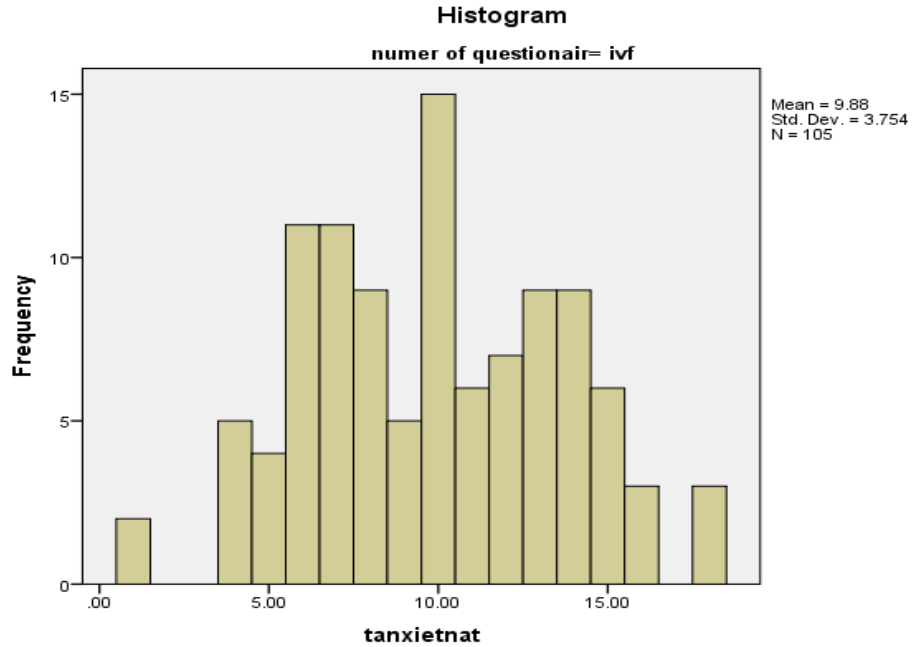


Figure 4-2: Anxiety among IVF pregnant women

Table 4-3 shows that depression symptoms was prevalent among 20% of naturally pregnant women . It also shows depression was prevalent among 24.9% of IVF pregnant women. The results show no significant difference between naturally pregnant women and IVF pregnant women (P: 0.557). Moreover, it shows that the IVF pregnant women were more likely to experience depression than naturally pregnant women.

Table 4-3: Prevalence of depression symptoms among naturally pregnant women compared with IVF pregnant women.

		Depression		Total	Chi	P. value
		No	Yes			
Natural	Count	168	42	210	0.345	0.557
	% within depression	80.0%	20.0%	100%		
IVF	Count	81	24	105		
	% within depression	77.1%	24.9%	100%		
Total	Count	249	66	315		
	% within depression	79.0%	21.0%	100.0%		

Logistic regression was used after modification of the scale score: 0-10 normal and 11-21 affected.

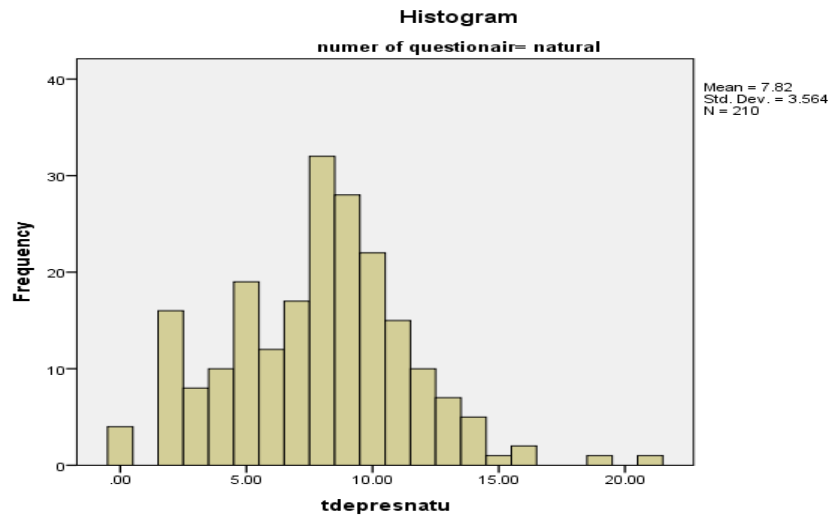


Figure 4-3: Depression among naturally pregnant women

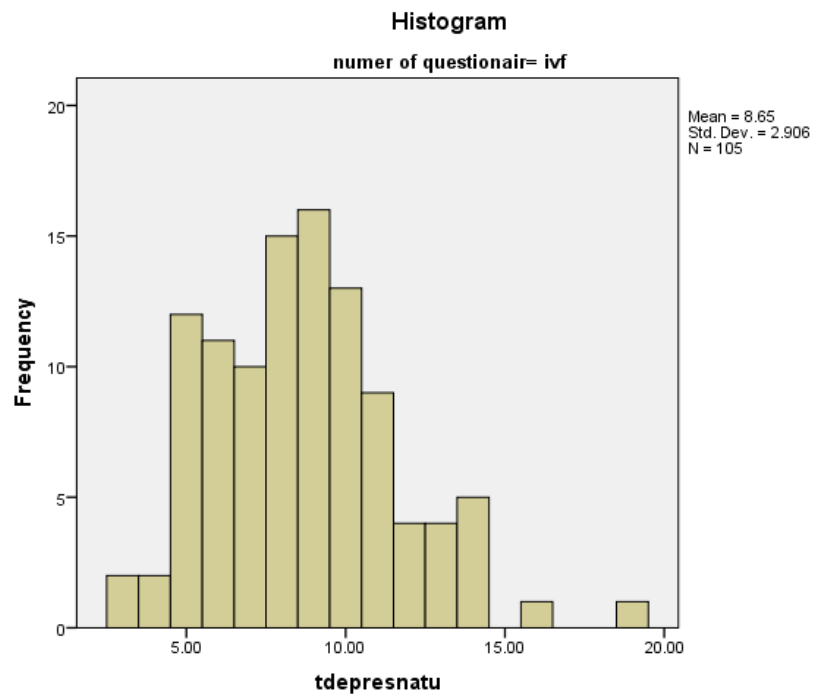


Figure 4-4: Depression among IVF pregnant women.

Factors associated with anxiety and depression symptoms among naturally pregnant women and IVF pregnant women

Table 4-4 shows the variables which might be behind the statistically significant correlations between naturally pregnant women and IVF pregnant women with anxiety. The results of this table indicate that IVF pregnant women were 11 times more likely to have anxiety symptoms than naturally pregnant women (OR=10.89, 95%CI: 3.499-33.897).

It also shows that participants who were not working had 2.3 probability of complaining from anxiety symptoms than working participants (OR=2.230, 95%CI: 1.040-1.040). Furthermore, the participants who had private health insurance had 4.5 times probability of complaining from anxiety than participants who had no health insurance (OR=4.440, 95%CI: 1.083-18.198). Moreover, the participants whose husbands were cigarette smokers had nearly 3 times more probability of having anxiety than participants whose husbands were not cigarette smokers (OR=2.886, 95%CI:1.414-5.889). In addition, the participants who had health complications in the current pregnancy were around 2.7 times likely to complain from anxiety than women who had no health complications in the current pregnancy (OR=2.684, 95%CI:1.203-5.989).

It was also found that the participants who were taking medication during pregnancy (e.g., folic acid and vitamins) had 0.13 simple probability of complaining from anxiety symptoms than the participants

who were not taking drugs (OR=0.125, 95%CI:0.028-0.565). The participants who had had natural and cesarean previous births had nearly the same (0.3) and (0.4) probability of complaining from anxiety symptoms than participants who had not previous births: OR=0.298, 95%CI: 0.118-0.754; OR=0.344, 95%CI: 0.141-0.835 respectively.

Moreover, it was found that IVF pregnant women who had infertility for more than 5 years had nearly the same (0.2) probability of complaining from anxiety symptom than the women who had infertility for 2-5 years (OR=0.185, 95%CI:0.069-0.502). In contrast, the women who had infertility due to problem in themselves were 4 times more likely to have anxiety symptoms than women who had infertility due to no specific causes (OR=4.034, 95%CI:1.288-12.638).

Table 4-4 presents the variables which might not have statistical significant correlation between the naturally pregnant women and IVF pregnant women with anxiety. The results of this table show that the participants who had governmental and social health insurance had nearly the same, (0.8) and (0.7), probability of complaining from anxiety symptom in comparison with the participants who hadn't any type of health insurance: (OR=0.819, 95%CI:0.371-1.805); (OR=0.699, 95%CI:0.350-1.394) respectively. In addition, IVF pregnant women who had infertility due to a problem in their husbands were 3 times more likely to complain from anxiety symptom than women who had infertility due to no specific causes (OR=2.823, 95%CI:0.861-9.260).

Table 4-4: Factors associated with anxiety symptoms among naturally and IVF pregnant women.

	B	S.E.	Wald	Df	P	OR	95% C.I	
							Lower	Upper
Type of pregnancy (1)	2.388	0.579	16.989	1	0.00	10.890	3.499	33.897
Work of woman (1)	0.802	0.389	4.247	1	0.039	2.230	1.040	4.781
Insurance T			6.435	3	0.092			
Insurance T(1)	-0.200-	0.403	0.246	1	0.620	0.819	0.371	1.805
Insurance T(2)	1.491	0.720	4.291	1	0.038	4.440	1.083	18.198
Insurance T(3)	-0.358-	0.352	1.033	1	0.309	0.699	0.350	1.394
Smoking husband (1)	1.060	0.364	8.482	1	0.004	2.886	1.414	5.889
Taking medication during Pregnancy(1)	-2.080-	0.770	7.292	1	0.007	0.125	0.028	0.565
Current complications(1)	0.987	0.410	5.814	1	0.016	2.684	1.203	5.989
Previous method			7.516	2	0.023			
Previous method(1)	-1.211-	0.474	6.536	1	0.011	0.298	0.118	0.754
Previous method (2)	-1.068-	0.453	5.566	1	0.018	0.344	0.141	0.835
Infertility years			11.011	1	0.001			
Infertility years(2)	-1.685-	0.508	11.011	1	0.001	0.185	0.069	0.502
Cause of infertility			6.901	2	0.032			
Cause of infertility(1)	1.038	0.606	2.933	1	0.087	2.823	0.861	9.260
Cause of infertility(2)	1.395	0.583	5.732	1	0.017	4.034	1.288	12.638

(Insurance T=Type of health insurance, Insurance T(1)=Government , Insurance T(2) = Private, Insurance T(3)= Social), (Previous method (1)=Natural birth, Previous method (2)=Cesarean section birth), (Infertility years(2) = > 5years), (Cause of infertility(1)=Women, cause of infertility(2)=Husband).

Table 4-5 shows the variables which had statistically significant correlations between naturally pregnant women and IVF pregnant women with depression. The results indicate that IVF pregnant women were 4.2 times more likely to have depression symptoms than naturally pregnant women: (OR=4.206, 95%CI: 1.240-14.269).

The table also shows that the participants who were working had 3 times more probability of complaining from depression symptoms than jobless participants: (OR=3.002, 95%CI: 1.315-6.853). In addition, the participants who had private health insurance were 4.3 times more likely to complain than the participants who had governmental and social health insurance: (OR=4.255, 95%CI:1.100-16.458). Moreover, the participants whose husbands were cigarette smokers had nearly 3.2 times more probability having depression than the participants whose husbands were not cigarette smokers (OR=3.179, 95%CI:1.462-6.911). In addition, the participants who had had cesarean previous birth had nearly the same (0.3) probability of complaining from depression than the participants who did not have previous births (OR=0.307, 95%CI: 0.120-0.789).

Moreover, Table 4-5 shows the variables which didn't reveal a statistical significant correlation between naturally pregnant women and IVF pregnant women who experienced depression.

According to the table, the participants who were taking medications during pregnancy (e.g., folic acid and vitamins) experienced health complications in the current pregnancy, and those who had natural previous birth nearly had the same probability of complaining from depression as other participants: (OR=0.265, 95%CI:0.060-1.181); (OR=1.768, 95%CI:0.793-3.941); (OR=0.714, 95%CI: 0.296-1.721) respectively.

In addition, the IVF pregnant women who had infertility more than 5 years had the same (0.8) probability of complaining from depression as women who had infertility for 2-5 years: (OR=0.750, 95%CI:0.256-2.196). Also, women whose infertility was due to a problem in themselves or in their husbands had 0.5 and 0.6 times nearly of having depression than women who had infertility due to unspecific causes: (OR= 0.534, 95%CI:0.126-2.273), (OR=0.600, 95%CI:0.161-2.236) respectively.

Table 4-5: Factors associated with depression symptoms among naturally and IVF pregnant women

	B	S.E.	Wald	Df	P	OR	95% C.I	
							Lower	Upper
Type of pregnancy (1)	1.437	0.623	5.314	1	0.021	4.206	1.240	14.269
Work of woman (1)	1.099	0.421	6.815	1	0.009	3.002	1.315	6.853
Insurance T			14.214	3	0.003			
Insurance T(1)	-1.004-	0.464	4.686	1	0.030	0.366	0.148	0.909
Insurance T(2)	1.448	0.690	4.402	1	0.036	4.255	1.100	16.458
Insurance T(3)	-0.820-	0.377	4.729	1	0.300	0.440	0.210	0.922
Smoking husband(1)	1.156	0.396	8.518	1	0.004	3.179	1.462	6.911
Taking medication during pregnancy(1)	-1.327-	0.762	3.032	1	0.082	0.265	0.060	1.181
Current complications(1)	0.570	0.409	1.941	1	0.164	1.768	0.793	3.941
Previous method			6.909	2	0.032			
Previous method (1)	-0.338-	0.449	0.565	1	0.452	0.714	0.296	1.721
Previous method (2)	-1.180-	0.481	6.019	1	0.014	0.307	0.120	0.789
Infertility years			0.275	1	0.600			
Infertility years(2)	-0.287-	0.548	0.275	1	0.600	0.750	0.256	2.196
Cause of infertility			1.078	2	0.583			
Cause of infertility(1)	-0.627-	0.739	0.720	1	0.396	0.534	0.126	2.273
Cause of infertility(2)	-0.512-	0.672	0.580	1	0.446	0.600	0.161	2.236

(Insurance T=Type of health insurance, Insurance T(1)=Government, Insurance T(2) = Private, Insurance T(3)= Social), (Previous method (1)=Natural birth, Previous method (2)=Cesarean section birth), (Infertility years(2) = > 5years), (Cause of infertility(1)=Women, Cause of infertility(2)=Husband).

Factors associated with anxiety or depression symptoms among naturally pregnant women and IVF pregnant women

Table 4-6 shows the variables which had statistically significant correlations between the naturally pregnant women and the IVF pregnant women who had anxiety or depression. The results of this table also show that the IVF pregnant women were 14 times more likely to have anxiety or depression symptoms than the naturally pregnant women: (OR=14.035, 95%CI: 4.650-42.362).

As the table shows, the participants who were working had 2.7 times probability of complaining from anxiety or depression symptom than jobless participants (OR=2.689, 95%CI: 1.352-5.346). In addition, the participants who had private and social health insurance had 4.5 and 0.5 probability of complaining than the participants who hadn't any type of health insurance: (OR=4.478, 95% CI:1.197-16.757); (OR=0.512, 95%CI:0.274-0.957) respectively. Also, the participants whose husbands were cigarette smokers had nearly 3 times more likely to have anxiety or depression than the participants whose husbands were not cigarette smokers: (OR=2.829, 95%CI:1.514-5.286). Moreover, the participants who

were taking medications during pregnancy (e.g., folic acid and vitamins) had nearly the same (0.15) probability of complaining as the participants who were not taking medications (OR=0.148, 95%CI: 0.031-0.701). Further, the participants who had had natural and cesarean previous birth had approximately the same (0.4, 0.3) times of complaining from anxiety or depression symptoms as the participants who hadn't had previous birth: (OR=0.375, 95%CI: 0.169-0.834), (OR=0.261, 95%CI: 0.117-0.581) respectively.

According to the table, the IVF pregnant women who had infertility for more than 5 years had nearly the same (0.3) probability of complaining from anxiety or depression as the participants who had infertility for 2-5 years: (OR=0.242, 95%CI: 0.091-0.641).

Table 4-6 presents the variables which showed no statistically significant correlation between the naturally pregnant women and the IVF pregnant women who had anxiety or depression.

The table shows that the participants who had governmental health insurance, and had health complications in the current pregnancy had nearly the same probability (0.63) and (1.7) of complaining from anxiety or depression as other participants: (OR=0.624, 95%CI:0.300-1.296); (OR=1.718, 95%CI:0.804-3.667) respectively.

Finally, the IVF pregnant women who had infertility due to a problem in themselves or in their husbands also had 1.2 and 1.9 nearly the same probability of complaining from anxiety or depression as

participants who had infertility due to unspecific causes: (OR=1.216, 95%CI:0.394-3.753); (OR=1.846, 95%CI:0.616-5.526) respectively.

Table 4-6: Factors associated with anxiety or depression symptoms among naturally and IVF pregnant women

	B	S.E.	Wald	Df	P	OR	95% C.I	
							Lower	Upper
Coding (1)	2.642	0.564	21.963	1	0.000	14.035	4.650	42.362
Work of woman (1)	0.989	0.351	7.952	1	0.005	2.689	1.352	5.346
Insurance T			11.789	3	0.008			
Insurance T(1)	-0.472-	0.373	1.602	1	0.206	0.624	0.300	1.296
Insurance T(2)	1.499	0.673	4.957	1	0.026	4.478	1.197	16.757
Insurance T(3)	-0.669-	0.319	4.393	1	0.036	0.512	0.274	0.957
Smoking husband (1)	1.040	0.319	10.622	1	0.001	2.829	1.514	5.286
Taking medication during pregnancy(1)	-1.913-	0.795	5.797	1	0.016	0.148	0.031	0.701
Current complications (1)	0.541	0.387	1.954	1	0.162	1.718	0.804	3.667
Previous method			11.131	2	0.004			
Previous method (1)	-0.980-	0.407	5.795	1	0.016	0.375	0.169	0.834
Previous method (2)	-1.344-	0.409	10.812	1	0.001	0.261	0.117	0.581
Infertility years			8.135	1	0.004			
Infertility years(2)	-1.420-	0.498	8.135	1	0.004	0.242	0.091	0.641
Cause of infertility			1.205	2	0.547			
Cause of infertility(1)	0.196	0.575	0.116	1	0.733	1.216	0.394	3.753
Cause of infertility(2)	0.613	0.559	1.200	1	0.273	1.846	0.616	5.526
Constant	0.059	0.893	0.004	1	0.947	1.061		

(Insurance T=Type of health insurance, Insurance T(1)=Government, Insurance T(2) = Private, Insurance T(3)= Social), (Previous method (1)=Natural birth, Previous method (2)=Cesarean section birth),(Infertility years(2) = > 5years), (Cause of infertility(1)=Women, Cause of infertility(2)=Husband).

Results show that the prevalence of anxiety and depression symptoms among the naturally pregnant women was 51.1% and (20% respectively. In contrast the prevalence of anxiety and depression symptoms among IVF pregnant women was 48.9% and 24.9% respectively. In addition, it showed that the pregnant women via IVF were more likely to experience anxiety and depression symptoms than naturally pregnant women (11 and 4.2 times, respectively) with significant differences (P: 0.00 and P: 0.021, respectively). Also, the results indicate that the pregnant women via IVF were 14 times more likely to have anxiety or depression symptoms than naturally pregnant women with significant differences (P: 0.000).

Chapter Five

Discussion

This chapter discusses the results of the study in comparison with the findings of other studies conducted in Arab, Muslim, European and other countries. In addition, it discusses where the results of this study meet and cross with the results of other studies.

5.1 Prevalence of anxiety and depression symptoms among naturally pregnant women compared with IVF pregnant women

The study results (Table 4-2) and (Table 4-3) indicated that approximately half of naturally pregnant women (51.1%) and less than one third of them (20%) had anxiety and depression symptoms respectively. Also, nearly half of the IVF pregnant women (48.9%) and nearly one third of them (24.9%) experienced anxiety and depression symptoms. In addition, the tables showed that the prevalence rate of anxiety among naturally pregnant women was higher than among the IVF pregnant women (51.1%>48.9%) (Anxiety) with significant differences (P: 0.01). Moreover, according to the tables, the prevalence rate of depression among IVF pregnant women was higher than among the naturally pregnant women (24.9%>20%) (Depression) with no significant differences (P: 0.01). Previous studies used the Hospital Anxiety and Depression Scale (HADS) to assess anxiety and depression among naturally pregnant women. They showed that these results were not in same line with the results of a study carried out in Brazil (Silva et al.,2017) and in Pakistan (Ali et al. 2012)

which found that the prevalence of anxiety among the naturally pregnant women was 26.8% and 20.4% respectively. Moreover, these results were nearly consistent with other studies conducted by Silva et al. (2016) in Brazil and Ali et al. (2012) in Pakistan. These studies found that the prevalence of depression among naturally pregnant women was 16.8% and 14.8% respectively.

In a different study which used different tools, Alqahtani et al. (2018) found that the prevalence of anxiety and depression among natural pregnant women in Saudi Arabia was 23.6% and 26.8% respectively. Al-Azri et al. (2016) conducted a study among naturally pregnant Omani women to identify the prevalence of depression among them and risk factors. They found that 24.3% of them had depression symptoms. In addition, Mohammad et al. (2011) found that the antenatal depression was 19% among pregnant Jordanian women.

Joelsson et al. (2017) used HADS and Edinburgh Postnatal Depression Scale (EPDS) to assess the prevalence of anxiety and depressive symptoms among naturally pregnant women and women pregnant after Assisted Reproduction Technology (ART) in Sweden. They found that anxiety symptoms were prevalent among 21.1% of women who became pregnant after ART while depression was prevalent among 8.5% of them. In contrast, they found that 18.8% of naturally pregnant women experienced anxiety symptoms as opposed to 10.3% who reported suffering from depression symptoms. No significant differences were found between the two groups. Hashemieh et al. (2013) examined level of anxiety among

pregnant Iranian women via ARTs. They found that 34% of women had moderate and severe levels of anxiety.

These study results indicate that the natural pregnant women and IVF pregnant women had nearly the same chance of developing anxiety and depression symptoms. Moreover, the prevalence rate of anxiety and depression among both groups of participants (natural and IVF) in this study was high in general when compared with other studies. In addition, these results are not surprising. No woman passes this period without suffering from anxiety or depression symptoms. These results indicate that these different effects might be attributed to political, social, cultural and economic reasons which affect the mental health of participants. These effects might be also related to the unique Palestinian environment. The Israeli military occupation has a great impact on citizens' quality of life in general. It makes the citizens constantly worried about their future. Palestinian women, therefore, need psychological support during the perinatal period to prepare them for birth. There is also a need for antenatal emotional support and assessment of symptoms of anxiety and depression to be integrated into the routine clinical practice.

Hobfoll et al. (2012) researched into the effects of exposure to political violence, psychosocial and economic resource loss, and social support, on psychological distress, and the association of each of these variables on subjective health. They found that being female and older were directly related to poorer subjective health and partially mediated via psychological distress. They also found that greater economic resource

loss, lower income, and poorer education were directly related to poor subjective health. In addition, an alternative model exploring subjective health as a mediator of psychological distress revealed that subjective health partially mediated the relationship between resource loss and psychological distress. Moreover, they indicated that the association between female sex, education, income, and age on psychological distress were fully mediated by subjective health. Also, social support and exposure to political violence were directly related to psychological distress.

5.2 Factors associated with anxiety and depression symptoms among natural pregnant women and IVF pregnant women

The findings of Table 4-4 and Table 4-5 showed that IVF pregnant women probably had more anxiety and depression symptoms than naturally pregnant women (11 and 4.2 times, respectively) with significant differences (P: 0.00 and P: 0.021, respectively). In addition, Table 4-6 showed how IVF pregnant women were 14 times more likely to have anxiety or depression symptoms than naturally pregnant women. These results are consistent with Eugster and Vingerhoets (1999)'s findings. In their study, they examined psychological response, after a successful IVF, of the woman and her partner. They found that anxiety and depression of the couples who had joined an IVF-treatment program were common reactions during pregnancy via IVF. They also found the IVF-parents experienced more stress during pregnancy than 'normal fertile' parents. These results are not consistent with the results of Klock and Greenfeld (2000)'s study in the USA. It was found that the women who conceived via

IVF were equal psychologically in anxiety and depression symptoms when compared with women who were naturally pregnant. In addition, this finding is in line with Monti et al. (2009)'s study which reported that the prevalence of depression was significantly higher among ART women than among the non-ART women during the antenatal assessment. These study results indicate that IVF woman pregnant could experience more worries, anxieties, and fears during the three trimester of pregnancy compared with naturally pregnant women. These might be attributed to their consideration of getting a baby as a dream for them and is on the verge of its realization. Most of them spend a lot of effort and a fortune to get only one baby. Also this baby would bring happiness to them and to their extended families.

The results of this study (Table 4-4) presented the main factors associated with anxiety among naturally pregnant women and IVF pregnant women with and without statistically significant differences.

According to the table, participants who had private health insurance, whose husbands were cigarette smokers, who had health complications in the current pregnancy and who were not working had 4.5, 2.9, 2.7, 2.3 times, respectively, probability of complaining from anxiety with significant differences ($P < 0.05$). These results are not consistent with the findings of Silva et al. (2017)'s study in Brazil, which reported that the main factors associated with anxiety among naturally pregnant women were complications in previous pregnancies ($P = 0.00$), history of miscarriage risk of preterm birth ($P = 0.05$), maternal desire regarding the pregnancy ($P = 0.01$), number of abortions ($P = 0.02$), number

of cigarettes smoked daily ($P=0.00$) and medication taken during pregnancy ($P=0.01$). These factors were statistically associated with the occurrence of anxiety during pregnancy. This shows that the finding of this study is consistent with the results which found that the women who had performed household activities had a higher chance of developing anxiety than working women with significant differences ($P=0.04$). These differences in results might be attributed to the differences in the population of the study and the selection methods. Furthermore, they might be related to differences in cultural and economic status. There are a lot of physical burdens that accompany having new a baby. In most families, the husband is the sole breadwinner, and the mother has heavy responsibility toward her family. She is expected to provide care for many children unlike her counterpart in European countries who provides care for one or two. There is a need for a good understanding of the associated factors behind anxiety to allow employing preventive measures in prenatal care.

Moreover, the table showed that the IVF pregnant women who had infertility due to a problem in themselves and who had infertility for more than 5 years were 4 and 0.2 times, respectively, more likely to complain from anxiety symptom with significant differences ($P<0.05$). Further, the IVF pregnant women who had infertility due to a problem in their husbands had 3 times more likely to complain from anxiety symptoms with no significant differences ($P>0.05$). These results are nearly consistent with the findings of Hashemieh et al. (2013)'s study which assessed the anxiety

level among pregnant women via ARTs. The study reported that there was a significant relationship between infertility duration and anxiety level ($P: 0.03$). The highest level of anxiety was during 10 to 12 years of infertility. It also showed that there was no significant relationship between level of anxiety and cause of infertility. These study results are indicative of the fact that as the number of infertility years increased, the women concerned would be more disappointed if the pregnancy terminated for any reasons, thus pushing them to experience higher levels of anxiety during the pregnancy period. Their surrounding people also make them feel anxious by exposing them to pressure before pregnancy due to late pregnancy. This feeling continues with women when they become pregnant. There is a need for additional attention to this group of pregnant women in order to protect their mental health by preventing or decreasing development of the anxiety symptoms.

The study results (Table 4-5) illustrated the main factors associated with depression among the naturally pregnant women and the IVF pregnant women with and with no statistically significant differences.

According to the table, the participants who had private health insurance, whose husbands were cigarette smokers, who were working, and who had cesarean previous births had 4.3, 3.2, 3, 0.3 times, respectively, probability of complaining from depression, with significant differences ($P < 0.05$). These results are not similar to Al-Azri et al. (2016)'s findings which reported that the antenatal depression among the naturally pregnant Omani women was associated with unplanned pregnancies ($P = 0.010$),

marital conflict ($P=0.001$) and a family history of depression ($P=0.019$). In addition, Mohammad et al. (2011) studied depression and anxiety among naturally pregnant Jordanian women. Their study revealed that stress, anxiety, financial problems, perceived lack of parenting knowledge, difficult relationship with the mother-in-law, unplanned pregnancy, and low self-efficacy were factors associated with antenatal depression.

Moreover, Ajinkya et al. (2013) found that the main factors associated with depression among pregnant Indian women were multigravidas, unexpected pregnancy, pregnant women with current obstetric complications, history of previous abortions, and past history of obstetric complications with significant differences.

Despite the cultural and social Palestinian environment similarity with the Arab countries, the economic and political environment is different in Palestine. This makes pregnancy, birth delivery and education of children a big challenge which needs a great responsibility by parents. This may lead to the feeling of depression. There is a need to understand the associated factors of depression to provide for preventive measures in prenatal care and provide appropriate psychological counseling to improve women's mental health during pregnancy.

Moreover, the table showed that IVF pregnant women who had infertility for more than 5 years, and who had infertility due to a problem in their husbands or in themselves had 0.8, 0.6, 0.5 times, respectively, probability of complaining from depression symptoms but with no

significant differences ($P>0.05$). Al-Homaidan (2011) found that the infertile women in the Kingdom of Saudi Arabia had more severe depression than fertile women ($53.8\%>37.2\%$) with significant differences. In their study, they found that infertile women who had been subjected to pressure from family members for not getting pregnant were more depressed than those had not been subjected to pressure. These study results indicate that as the number of infertility years increased, women became more disappointed. They would also experience higher levels of anxiety and depression during pregnancy period. Women who had depression before pregnancy due to pressure from family members for not getting pregnant were likely to continue suffering from depression during the pregnancy period. In addition, their feeling of fear and disappointment would likely increase if they did not get a baby. There is a need for quality attention to this group of pregnant women in order to protect their mental health by preventing or decreasing development of the depression symptoms.

5.3 Factors associated with anxiety or depression symptoms among naturally pregnant women and IVF pregnant women

Table 4-4 presented the main factors associated with anxiety or depression symptoms among naturally pregnant women and IVF pregnant women with and with no statistically significant differences.

According to the table, private health insurance, cigarette smoking husband, woman's work, and social health insurance were the main factors behind development of anxiety or depression symptoms with 4.5, 3, 2.7, (respectively) times probability and with statistically significant differences ($P < 0.05$). These results are similar to Ali et al. (2012)'s findings which pointed that pregnant women who were working had more anxiety and depression than women who were not engaged in labor activity ($33.3\% > 32.8\%$). The results of the study are, however, different from Biaggi et al. (2016)'s findings which indicated that the main factors associated with antenatal depression or anxiety were lack of partner or of social support, history of abuse or of domestic violence, personal history of mental illness, unplanned or unwanted pregnancy, adverse events in life and high perceived stress, present/past pregnancy complications, and pregnancy loss. Karmaliani et al. (2009) found that the psychological distress was associated with husband's unemployment ($P = 0.032$), lower household wealth ($P = 0.027$), having 10 or more years of formal education ($P = 0.002$), a first ($P = 0.002$) and an unwanted pregnancy ($P < 0.001$). In addition, this study findings are not consistent with the findings of Alqahtani et al. (2018)'s study conducted in Saudi Arabia. In their study they found that the prevalence of anxiety and depression among pregnant women was higher among unemployed women with history of miscarriage and unplanned pregnancy. The differences were found to be statistically significant. These differences might be attributed to differences in the variables of study. There is a need for a good understanding of the main factors associated with the development of anxiety and depression

symptoms during pregnancy and for the development of appropriate psychological program to improve Palestinian women's mental health.

As the table showed, IVF pregnant women who had infertility for more than 5 years had nearly the same (0.3) probability of complaining from anxiety or depression as the participants who experienced infertility for 2-5 years with significant differences. In addition, the IVF pregnant women who had infertility due to problem in themselves or in their husbands also had (1.2) (1.9) nearly the same probability of complaining from anxiety or depression as the participants who had infertility due to unspecific causes with no significant difference. These results are nearly consistent with Ramezanzadeh et al. (2004)'s findings which showed a significant relationship between depression and cause of infertility, duration of infertility, educational level, and job of women. Their study reported that anxiety had a significant relationship with duration of infertility and educational level. However, there was no significant relationship with cause of infertility, or job of woman. In the same context, Maroufizadeh et al. (2017) found that patients with 5 years of infertility were more likely than others to experience anxiety and depressive symptoms. These study results show that the number of infertility years and cause of infertility were the main factors behind the development of anxiety and depression during pregnancy. It should maintained that during pregnancy all women experience physical and psychological changes, thus necessitating giving quality attention to infertile women by setting up a special counseling program for them.

Chapter six

Conclusions, Implications, Recommendations, Limitations

6.1 Conclusions

The findings of this study have showed that pregnant women via IVF were more likely to experience anxiety and depression symptoms than naturally pregnant women (11 and 4.2 times, respectively) with significant differences (P: 0.00 and P: 0.021, respectively). In addition, the findings have also showed that pregnant women via IVF were 14 times more likely to have anxiety or depression symptoms than naturally pregnant women with significant differences (P:0.000).

6.2 Implications

- 1) Exploring and identifying anxiety and depression symptoms among pregnant women can help to develop effective or/and efficient plans and take early intervention to enhance the mental health of Palestinian women. In addition, this can help in developing valid screening and intervention strategies to be used widely in Palestine.
- 2) Increasing public and professional awareness of psychological care might decrease the size of psychological problems.
- 3) The results of this study have provided the first documentation of the current situation of perceptions of anxiety and depression among pregnant Palestinian women and pregnant women via IVF in particular.

6.3 Recommendations

- 1) It is recommended that another study with further psychiatric evaluation for anxiety and depression among naturally pregnant women and pregnant women via IVF be conducted to assess the actual prevalence of anxiety and depression in Palestine.
- 2) The Palestinian Minister of Health (PMOH) must expand the role of nurses or staff all antenatal clinics with psychological counselors to provide regular psychological support and debriefing to the ladies.
- 3) The managers of IVF centers should staff their centers with psychological counselors to provide regular psychological support and debriefing to the ladies.
- 4) Antenatal screening for anxiety and depression should be conducted as routine practice in all antenatal clinics and IVF centers. In addition, the couples should also be encouraged to seek psychological support during pregnancy.

6.4 Limitations

- 1) A larger study population requires time, effort and money; therefore, the study population was limited to Nablus and Ramallah communities.
- 2) The researcher could not study the risk factors for anxiety and depression on fetus due to limited time and resources.

3) The researcher could not study the effect of anxiety and depression on pregnant women and fetuses during and post-delivery due to limited time and resources

4) In the Palestinian culture, the infertility problem is a sensitive issue to discuss easily. Therefore some women refused to participate in this study. The researcher devoted a great effort to convince the IVF pregnant women to participate in the study. To that end, she gave them more details about the aims of the study and reassured them of the confidentiality of information provided.

In general, most of the pregnant women and the managers of IVF centers and antenatal clinics felt with unease because of their fear of the title of the study due to lack of knowledge about the importance of mental health in our life. The researcher had to discuss the private details and the most unique period of the women's life.

References

- Ajinkya, S., Jadhav, P. R., & Srivastava, N. N. (2013). *Depression during pregnancy: Prevalence and obstetric risk factors among pregnant women attending a tertiary care hospital in Navi Mumbai*. **Industrial Psychiatry Journal**, 22(1), 37-40.
- Al Aseri, Z. A., Suriya, M. O., Hassan, H. A., Hasan, M., Sheikh, S. A., Al Tamimi, A., Alshathri, M., & Khalid, N. (2015). **Reliability and validity of the Hospital Anxiety and Depression Scale in an emergency department in Saudi Arabia: a cross-sectional observational study**. **BMC Emergency Medicine**, 15, 28.
- Al-Azri, M., Al-Lawati, I., Al-Kamyani, R., Al-Kiyumi, M., Al-Rawahi, A., Davidson, R., & Al-Maniri, A. (2016). *Prevalence and risk factors of antenatal depression among Omani women in a primary care setting: Cross-sectional study*. **Sultan Qaboos University Medical Journal**, 16(1), e35-41.
- Alder, J., Fink, N., Bitzer, J., Hosli, I., & Holzgreve, W. (2007). *Depression and anxiety during pregnancy: A risk factor for obstetric, fetal and neonatal outcome? A critical review of the literature*. **The Journal of Maternal-Fetal Medicine**, 20, 189-209.

- Al-Homaidan, H.T. (2011). *Depression among women with primary infertility attending an infertility clinic in Riyadh, Kingdom of Saudi Arabia: Rate, severity, and contributing factors*. **International Journal of Health Sciences**, 5(2), 108-115.
- Ali, N. S., Azam, I. S., Ali, B. S., Tabbusum, G., & Moin, S. S. (2012). *Frequency and associated factors for anxiety and depression in pregnant women: A hospital-based cross-sectional study*. **The Scientific World Journal**, 2012, 653098.
- Alqahtani, A. H., Al Khedair, K., Al-Jeheiman, R., Al-Turki, H. A., & Al Qahtani, N. H. (2018). *Anxiety and depression during pregnancy in women attending clinics in a University Hospital in Eastern province of Saudi Arabia: Prevalence and associated factors*. **International Journal of Women's Health**, 10, 101-108.
- American Psychiatric Association (2013). **Diagnostic and statistical manual of mental disorders (5th ed.)**. Washington, DC: American Psychiatric Association.
- Astrid, C., R.F., Claude, De., Nathali, th., & Spitz, E. (2013). *Anxiety symptom and coping strategies in the perinatal period*. **Journal of BMC Pregnancy and Children**, 13(233), 14710.

- Bazrafshan, M.R., & MahmoodiRad, A. (2009). *The relationship between women's anxiety during pregnancy and labor outcomes in Lorestan hospitals*. Lorestan University of Medical Sciences Journal, 1(1), 11-12.
- Biaggi, A., Conroy, S., Pawlby, S., & Pariante, C. M. (2016). *Identifying the women at risk of antenatal anxiety and depression: A systematic review*. Journal of Affective Disorders, 191, 62-77.
- Bisetegn, T.A., Mihretie, G., & Muche, T. (2016). **prevalence and predictors of depression among pregnant women in Debretabor Town, Northwest Ethiopia**. Public Library of Science, 11(9), e0161108.
- Bjelland, I., Dahl, A.A., Haug, T.T., & Neckelmann, D. (2002). *The validity of the hospital anxiety and depression scale. An updated literature review*. Journal of Psychosomatic Research, 52 (2), 69-77.
- Cafasso, J. (2017). **The first trimester of pregnancy**. Retrieved 2017, from <https://www.healthline.com/health/pregnancy/first-trimester#overview1>.
- Catov, J. M., Abatemarco, D. J., Markovic, N., & Roberts, J. M. (2010). *Anxiety and optimism associated with gestational age at birth and fetal growth*. Maternal and Child Health Journal, 14(5), 758-764.

- Chan, C.Y., Lee, A.M., Lam, S.K., Lee, C.P., Leung, K.Y., Koh, Y.W., Koh, Y.W., & Tang, C.K. (2013). *Antenatal anxiety in the first trimester: Risk factors and effects on anxiety and depression in the third trimester and 6-week postpartum*. *Open Journal of Psychiatry*, 3, 301-310.
- Cooke, P.S., Holsberger, D.R., Witorsch, R.J., Sylvester, P.W., Meredith, J.M., Treinen, K.A., & Chapin, R.E. (2004). **Thyroid hormone, glucocorticoids, and prolactin at the nexus of physiology, reproduction, and toxicology**. *Toxicology and Applied Pharmacology*, 194, 309-35.
- El-Rufaie, O.E., & Absood, G.H. (1995). **Retesting the validity of the Arabic version of the Hospital Anxiety And Depression (HAD) scale in primary health care**. *Social Psychiatry and Psychiatric Epidemiology*, 30 (1), 26-31.
- Eugster, A., & Vingerhoets, A.J. (1999). **Psychological aspects of in vitro fertilization: A review**. *Social Science & Medicine*, 48, 575-589.
- Gameiro, S., Boivin, J., Dancet, E., Klerk De, C., Emery, M., Lewis-Jones, C., Thorn, P., Van den Broeck, U., Venetis, C., Verhaak, C.M., Wischmann, T., & Vermeulen, N. (2015) . **ESHRE guideline: Routine psychosocial care in infertility and medically assisted reproduction – A guide for fertility staff**. *Human Reproduction*, 30 (11), 2476-2485.

- Hamid, F., Asif, A., & Haider, II. (2008). *Study of anxiety and depression during pregnancy*. **Pakistan Journal of Medical Sciences**, 24(6), 861-64.
- Hashemieh, C., Samani, L.N., & Taghinejad, H. (2013). *Assessment of anxiety in pregnancy following assisted reproductive technology (ART) and associated infertility factors in women commencing treatment*. **Iranian Red Crescent Medical Journal**, 15(12), e14465.
- Hernandez-Martinez, C., Val, V. A., Murphy, M., Busquets, P. C., & Sans, J. C. (2011). **Relation between positive and negative maternal emotional states and obstetrical outcomes**. *Women and Health*, 51(2), 124-135.
- Hjelmstedt, A., Widstrom, A.M., Wramsby, H., & Collins, A. (2004). **Emotional adaptation following successful in vitro fertilization**. *Fertility and Sterility*, 81(5), 1254-64.
- Hobfoll, S. E., Hall, B. J., & Canetti, D. (2012). **Political violence, psychological distress, and perceived health: A longitudinal investigation in the Palestinian Authority**. *Psychological Trauma: Theory, Research, Practice and Policy*, 4(1), 9-21.

- Hoeger, K., Bhagavath, B., Lewis, V., Queenan, J.T., & Vitek, W. (2013). **In vitro fertilization process, risk, and consent**. Retrieved 2017, from:
<https://www.urmc.rochester.edu/MediaLibraries/URMCMedia/fertility-center/documents/In-Vito-Fertilization-4-29-15-updated.pdf>.
- Joelsson, S.L., Tyden, T., Wanggren, K., Georgakis, M.K., Stern, J., Berglund, A., & Skalkidou, A. (2017) .**Anxiety and depression symptoms among sub-fertile women, women pregnant after infertility treatment, and naturally pregnant women**. *European Psychiatry*, 45, 212-219.
- Karmaliani, R., Asad, N., Bann, C. M., Moss, N., McClure, E. M., Pasha, O., Wright, L. L., & Goldenberg, R. L. (2009). *Prevalence of anxiety, depression and associated factors among pregnant women of Hyderabad, Pakistan*. *International Journal of Social Psychiatry*, 55(5), 414 -24.
- Klock, S.C., & Greenfeld, D.A. (2000). **Psychological status of in vitro fertilization patients during pregnancy: A longitudinal study**. *Fertility and Sterility*, 73, 1159-1164.
- Klock, S. (2004). **Psychological adjustment to twins after infertility**. *Best Practice and Research in Clinical Obstetrics and Gynecology*, 18 (4), 645-656.

- Kupka, M.S., D'Hooghe, T., Ferraretti, A.P., De Mouzon, J., Erb, K., Castilla J.A., Calhaz-Jorge, C., De Geyter, C.H., & Goossens, V. (2015). **Assisted reproductive technology in Europe, 2011: Results generated from European registers by ESHRE.** *Human Reproduction*, 31, 233-48.
- Leigh, B., & Milgrom, J. (2008). **Risk factors for antenatal depression, postnatal depression and parenting stress.** *BMC Psychiatry*, 8, 24.
- Lobel, M., Cannella, D. L., Graham, J. E., DeVincent, C., Schneider, J., & Meyer, B. A. (2008). **Pregnancy-specific stress, prenatal health behaviors, and birth outcomes.** *Health Psychology*, 27(5), 604-615.
- Maroufizadeh, S., Ghaheeri, A., Almasi-Hashiani, A., Mohammadi, M., Navid, B., Ezabadi, Z., & Samani, R. (2017). ***The prevalence of anxiety and depression among people with infertility referring to Royan Institute in Tehran, Iran: A cross-sectional questionnaire study.*** *Middle East Fertility Society Journal*, 23(2), 103-106.
- Mohammad, K.I., Gamble, J., & Creedy, D.K. (2011). **Prevalence and factors associated with the development of antenatal and postnatal depression among Jordanian women.** *Midwifery*, 27(6), e238-45.
- Monach, J. (2005). *Psychological aspects of infertility.* Bristol: British Fertility Society. Retrieved 2017, from:

<http://www.britishfertilitysociety.org.uk/public/factsheets/docs/BFS-psychosocial%20aspects%20of%20infertility.pdf>.

- Monti, F., Agostini, F., Fagandini, P., La Sala, G.B., & Blickstein, I. (2009). **Depressive symptoms during late pregnancy and early parenthood following assisted reproductive technology.** *Fertility and Sterility*, 91(3), 851-7.
- Nasreen, H. E., Kabir, Z. N., Forsell, Y., & Edhborg, M. (2011). **Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: A population based study in rural Bangladesh.** *BMC Women's Health*, 11, 22.
- Nierenberg, C. (2015). **Mood swings and mommy brain: The emotional challenges.** Live Science. Retrieve 2017, from www.livescience.com/51043-pregnancy.
- Padubidri, V.G., & Daftary, S.N. (2011). **Shaw's Textbook of Gynaecology.** India: Reed Elsevier India Private Limited.
- Pereira, P.K., Lovisi, G.M., Lima, L.A., & Legay, L.F. (2010). **Obstetric complications, stressful life events, violence and depression during pregnancy in adolescents at primary care setting.** *Revista de Psiquiatria Clínica*, 37(5), 216-22.
- Ramezanzadeh, F., Aghssa, M. M., Abedinia, N., Zayeri, F., Khanafshar, N., Shariat, M., & Jafarabadi, M. (2004). **A survey of relationship between anxiety, depression and duration of infertility.** *BMC Women's Health*, 4(1), 9.

- Rauchfuss, M., & Maier, B. (2011). ***Biopsychosocial predictors of preterm delivery***. **Journal of Perinatal Medicine**, 39(5), 515-521.
- Rubinchik, S. M., Kablinger, A. S., & Gardner, J. S. (2005). ***Medications for panic disorder and generalized anxiety disorder during pregnancy***. **Primary care companion to the Journal of Clinical Psychiatry**, 7(3), 100-105.
- Schetter, C. D. (2011). **Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues**. **Annual Review of Psychology**, 62, 531-558.
- Schetter, C., D., Tanner, L. (2012). **Anxiety, depression and stress in pregnancy: Implications for mothers, children, research, and practice**. **Current Opinion in Psychiatry**, 25(2), 141-8.
- Schmidt, L. (2009). **Social and psychological consequences of infertility and assisted reproduction-what are the research priorities?**. **Human Fertility**, 12,14-20.
- Sejbaek, C.S., Pinborg, A., Hageman, I., Forman, J.L., Hougaard, C,Ø., & Schmidt, L. (2015). **Are repeated assisted reproductive technology treatments and unsuccessful 1 outcome risk factors for unipolar depression in infertile women?**. **Acta Obstetricia et Gynecologica Scandinavica**, 94 (10), 1048-1055.

- Silva, M.M.J., Leite, E.P.R.C, Nogueira, D.A., & Clapis, M.J. (2016). **Depression in pregnancy. Prevalence and associated factors.** Invest. Investigación y Educación en Enfermería, 34 (2), 342-350.
- Silva, M.M.J., Nogueira, D.A., Clapis, M.J, & Leite, E.P.R.C. (2017). **Anxiety in pregnancy: Prevalence and associated factors.** Revista da Escola de Enfermagem da USP, 51, e03253.
- Snaith, R. P. (2003). **The hospital anxiety and depression scale.** Health and Quality of Life Outcomes, 1(1), 29.
- Stickler, T., & Watson, K. (2017). **Trimesters and Due Date.** Retrieved 2017, from:

<https://www.healthline.com/health/pregnancy/calendar#trimesters>.
- Su, T.J., Tzeng, Y.L., & Kuo, P.C. (2011). ***The anxiety of Taiwanese women with or without continuity treatment after previous in vitro fertilization failure.*** Journal of Clinical Nursing, 20 (15-16), 2217-23.
- Vahratian , A., Smith, Y.R., Dorman, M., & Flynn, H.A. (2011). **Longitudinal depressive symptoms and state anxiety among women using assisted reproductive technology.** Fertility and Sterility, 95(3), 1192-4.
- Verbeek, T., Arjadi, R., Vendrik, J. J., Burger, H., & Berger, M. Y. (2015). **Anxiety and depression during pregnancy in Central America: A cross-sectional study among pregnant women in the developing country Nicaragua.** BMC Psychiatry, 15, 292. من الى ???????

- Wichman, C.L., Ehlers, S.L., Wichman, S.E., Weaver, A.L., & Coddington, C. (2011). **Comparison of multiple psychological distress measures between men and women preparing for in vitro fertilization.** *Fertility and Sterility*, 95, 717-21.

- World Health Organization. (2009a). **Sexual and reproductive health: Infertility definitions and terminology.** Retrieved 2017, from:

<http://www.who.int/reproductivehealth/topics/infertility/definitions/en/>.

- World Health Organization. (2009b). **Mental Health Aspects of Women's Reproductive Health: A Global Review of the Literature.** Geneva. Retrieved 2017, from:

http://apps.who.int/iris/bitstream/10665/43846/1/9789241563567_eng.pdf.

- World Health Organization. (2002). **Mental health: Responding to the call for Action.** Retrieved 2017, from:

http://apps.who.int/gb/archive/pdf_files/WHA55/ea5518.pdf.

- Zigmond, A. S., & Snaith, R. P. (1983). **The hospital anxiety and depression scale.** *Acta Psychiatrica Scandinavica*, 67(6), 361-370.

Annex



بسم الله الرحمن الرحيم

جامعة النجاح الوطنية

استمارة الموافقة على المشاركة بالبحث

انا الطالبة الاء عدنان حسني قلالوه، ماجستير الصحة النفسية في جامعة النجاح الوطنية.

اقوم بعمل دراسة بعنوان (أعراض القلق والاكتئاب لدى النساء الحوامل عن طريق التخصيب في المختبر (اطفال الانابيب) و مقارنتها مع النساء اللواتي يحملن بشكل طبيعي و يتلقين الرعاية الأولية في عيادات ما قبل الولادة: "دراسة مقارنة")

وذلك كمتطلب للحصول على شهاده الماجستير .

اود من حضرتكم الاشتراك بهذه الدراسة علما بانني سأقوم بجمع المعلومات منكم بوقت لا يتجاوز 20 دقيقه ويحق لكم عدم الموافقة او الانسحاب في أي وقت تشاؤون .

المشاركة في البحث هي من خلال تعبئة الاستبيان المرفق فقط ، وانه لا يترتب على عدم موافقتكم على الاستمرار في المشاركة في البحث أي مضره لكم.

مع العلم بأن المعلومات المأخوذة من النساء الحوامل سوف تعامل بسرية تامة ولن تستخدم لغرض آخر غير البحث العلمي .

اسم المشاركه : _____

اسم الباحث : _____

الترقيع : _____

التوقيع: _____

1. البيانات الديمغرافية والاجتماعية:

الرجاء وضع اشارة دائرة حسب ما يتناسب مع وضعك ، الأسئلة رقم (2 ، 26 ، 27 ، 28 ، 29) للنساء اللواتي حملهن بالزراعة فقط.

1- المدينة: 1. نابلس 2. رام الله

2- اسم مركز الاخصاب: 1. مركز رزان في رام الله 2. مركز رزان في نابلس
3. مركز الشنار 4. مركز ديمه 5. مركز علاج العقم في مستشفى النجاح الوطني الجامعي

3- اسم العيادة : 1. عيادات نابلس 2. عيادات رام الله

4- عمر الحامل: 1. (اقل من 18 سنة) 2. (18-35 سنة) 3. (اكثر من 35 سنة)

5- الديانة الحامل : 1. مسلم 2. مسيحي 3. غير ذلك

6- مستوى التعليم للحامل: 1. ابتدائي 2. ثانوي 3. جامعي

7- طبيعة عمل الحامل : 1. تعمل 2. لا تعمل (ربة منزل)

8- عمر الزوج : 1. (اقل من 20 سنة) 2. (20-35 سنة) 3. (اكثر من 35 سنة)

9- مستوى التعليم للزوج: 1. ابتدائي 2. ثانوي 3. جامعي

10- طبيعة عمل الزوج : 1. عامل 2. موظف 3. تاجر 4. لا يعمل

11- معدل الدخل الشهري للأسرة : 1. (اقل من 1500 شيكل) 2. (اكثر من 1500 شيكل)

12- نوع التأمين الصحي : 1. تأمين حكومي 2. تأمين قطاع خاص 3. تأمين شؤون اجتماعيه
4. لا يوجد

- 13- هل الحامل تدخن : 1. نعم 2. لا
- 14- هل الزوج يدخن : 1. نعم 2. لا
- 15- هل تتناول الحامل ادوية مساعدة اثناء الحمل مثل (الفوليك اسيد و الفيتامينات) : 1. نعم 2. لا
- 16- هل يوجد امراض مزمنة سابقة لدى الحامل : 1. نعم 2. لا
- 17- اذا الإجابة نعم (اذكرها) : _____
- 18- عدد مرات الحمل قبل الحالي : 1. (لا يوجد) 2. (1-5) 3. (اكثر من 5)
- 19- عدد مرات الانجاب : 1. (لا يوجد) 2. (1-5) 3. (اكثر من 5)
- 20- عدد مرات الاجهاض : 1. (لا يوجد) 2. (1-3) 3. (اكثر من 3)
- 21- التعرض لمضاعفات صحية سابقة بسبب الحمل : 1. نعم 2. لا 3. حامل اول مره
- 22- اذا الإجابة نعم (اذكرها) : _____
- 23- هل يوجد مضاعفات صحيه في الحمل الحالي : 1. نعم 2. لا
- 24- اذا الإجابة نعم (اذكرها) : _____
- 25- طريقة الولادة السابقة : 1. طبيعية 2. قيصرية 3. لا يوجد ولادات سابقة
- 26- عدد سنوات العقم : 1. (2-5) 2. (اكثر من 5)
- 27- سبب العقم من : 1. الزوج 2. الزوجة 3. غير محدد

28- عدد مرات الاخصاب : 1. (اول مره) 2. (2-5) 3. (اكثر من 5)

29- عدد المرات التي نجح فيها الاخصاب (انجبت طفل حي) : 1. (ولا مره) 2. (1-3) 3. (اكثر من 3)

30- حمل الحالي مخطط له : 1. نعم 2. لا

31- حمل الحالي مرغوب فيه : 1. نعم 2. لا

32- فترة الحمل (عمر الجنين) الحالي: 1. (12 اسبوع او اقل) 2. (13-27 اسبوع) 3. (28 اسبوع فاكثر)

33- تلقت الحامل دعم نفسي داخل العيادة او مركز الاخصاب او خارجه : 1. نعم 2. لا

34- التعرض لضغوطات عائلية بسبب عدم الحمل : 1. نعم 2. لا

35- هل يوجد زيجات سابقه لدى الحامل : 1. نعم 2. لا

36- هل يوجد زيجات سابقه لدى الزوج : 1. نعم 2. لا

37- عدد سنوات الزواج الحالي : 1. (1-3) 2. (4-6) 3. (اكثر من 6 سنوات)

38- عمر الحامل عند الزواج: 1. (اقل من 18 سنة) 2. (18-35 سنة) 3. (اكثر من 35 سنة)

II. مقياس القلق و الاكتئاب :

من فضلك قومي باختيار الإجابة المناسبة بوضع دائرة عليها			
A	احس بانني هامد (فاقد للطاقة):	D	اشعر بالتوتر لشديد:
	3. تقريبا في كل وقت		3. أكثر الوقت
	2. في كثير من الاحيان		2. عدة مرات
	1. في بعض الاوقات		1. احيانا
	0. لا اشعر بذلك مطلقا		0. لا اشعر بذلك مطلقا
A	ينتابني شعور بالخوف:	D	انا لا زلت اتمتع بالأشياء التي اعتدت ان استمتع بها:
	0. لا، على الإطلاق		0. بالتأكيد ، كما كنت
	1. احيانا		1. ليس تماما
	2. كثيرا		2. قليلا
	3. في اغلب الاوقات		3. بالكاد ، على الإطلاق
D	لقد فقدت الاهتمام بمظهري:	A	اشعر بنوع من الخوف ، وكان شينا مروعا على وشك الحدوث:
	3. بالتأكيد فقدت كل الاهتمام		3. بالتأكيد، ويشكل مزعج
	2. انا لا اهتم بمظهري كما يجب ان اهتم		2. نعم، ولكن اقل سوءا
	1. قد لا اعتني بمظهري كما يحب		1. قليلا، لكنه لا يقلقني
	0. اعتني بمظهري بشكل جيد كما كنت سابقا		0. لا اشعر بذلك على الإطلاق
A	الاحساس بضيق الصدر دون مجهود جسدي:	D	استطيع الضحك وروية الجوانب الممتعة في الأشياء:
	3. في الواقع، كثيرا جدا		0. كما كنت سابقا
	2. كثيرا، لا بأس به		1. اقل مما كنت سابقا
	1. اشعر بذلك قليلا		2. بالتأكيد، ليس كثيرا الان
	0. لا اشعر بذلك على الإطلاق		3. لا اشعر بذلك على الإطلاق
D	انا اتطلع للأشياء من حولي باستمتاع:	A	تأتيني دائما افكار مقلقة:
	0. بقدر ما يمكنني فعله		3. اغلب الاوقات
	1. نوعا ما اقل مما اعتدت على فعله		2. معظم الاوقات
	2. بالتأكيد اقل مما اعتدت على فعله		1. من وقت لآخر، ولكن ليس كثيرا
	3. لا، على الإطلاق		0. احيانا
A	ينتابني احساس مفاجئ بالهلع:	D	اشعر بالبهجة:
	3. في الواقع ، في كثير من الاحيان		3. لا، على الإطلاق
	2. غالبا		2. ليس كثيرا
	1. ليس كثيرا		1. في بعض الاحيان
	0. لا اشعر بذلك على الإطلاق		0. في اغلب الاحيان
D	يمكنني الاستمتاع بقراءة كتاب جيد او مشاهدة البرامج التلفزيونية او الاستمتاع الى الإذاعة:	A	يمكنني الجلوس براحة و الشعور بالاسترخاء:
	0. غالبا		0. بكل تأكيد
	1. في بعض الاحيان		1. عادة ما
	2. ليس كثيرا		2. ليس كثيرا
	3. نادرا جدا		3. لا يمكنني ذلك على الإطلاق

I. Socio-demographic data:

Please circle as appropriate to your situation Questions 2, 26, 27, 28, 29 are for women who have only been pregnant by IVF.

- 1) **City:** 1. Nablus 2. Ramallah
- 2) **Name of fertility center:** 1. Razan center in Ramallah 2. Razan center in Nablus
3. Shunnar center 4. Dima center
- 3) **Name of clinic:** 1. Nablus clinics 2. Ramallah clinics
- 4) **Age of pregnant woman:** 1. less than 18 2. 18-35 3. more than 35
- 5) **Pregnant's religion:** 1. Muslim 2. Christian 3. Other
- 6) **Education level of pregnant woman :** 1. Primary 2. Secondary 3. College
- 7) **Work of pregnant woman:** 1. Working 2. Not working (housewife)
- 8) **Age of husband:** 1. less than 20 2. 20-35 3. more than 35
- 9) **Education level of husband :** 1. Primary 2. Secondary 3. College
- 10) **Work of husband:** 1. Worker 2. Employee 3. Merchant 4. Not working
- 11) **Average monthly income:** 1. less than 1,500 shekels 2. more than 1,500 shekels
- 12) **Type of health insurance:** 1 Government insurance 2. Private sector insurance
3. Social insurance 4. No insurance
- 13) **Pregnant woman is a smoker:** 1. Yes 2. No
- 14) **Smoking husband:** 1. Yes 2. No
- 15) **Pregnant woman takes medication during pregnancy (eg, folic acid and vitamins):** 1. Yes 2. No
- 16) **Does the pregnant woman have chronic diseases?** 1. Yes 2. No
- 17) **If yes, state them:**

18) **Number of pregnancies before current pregnancy:** 1.(None) 2. (1-5) 3. (More than 5)

19) **Number of births:** 1. (None) 2. (1-5) 3. (more than 5)

20) **Number of miscarriages:** 1. (no) 2. (1-3) 3. (more than 3)

21) **Exposure to previous health complications due to pregnancy :**

1. Yes 2. No 3. First Pregnancy

22) **If yes, state them:**

23) **Are there any health complications in the current pregnancy:** 1. Yes 2. No

24) **If yes , state them:**

25) **Previous delivery method:** 1. Natural 2. Cesarean section 3. No previous births

26) **Number of infertility years:** 1. (2-5) 2. (more than 5)

27) **Cause of infertility:** 1. Husband 2. Wife 3. Not specified

28) **Number of fertilization times:** 1. (first time) 2. (2-5) 3. (more than 5)

29) **Number of times fertilization has succeeded (have given birth to a live child):**

1. (not once) 2. (1-3) 3. (more than 3)

30) **Current pregnancy was planned:** 1. Yes 2. No

31) **Current pregnancy is desirable:** 1. Yes 2. No

32) **Current gestational age:** 1. (12 weeks or less) 2. (13-27 weeks) 3. (28 weeks and more)

33) **Pregnant women received psychological support inside or outside the clinic or fertility center:** 1. Yes 2. No

34) **Pressure from the family for not getting pregnant:** 1. Yes 2. No

35) **Are there previous marriages for pregnant woman:** 1. Yes 2. No

36) **Are there previous marriages for husband:** 1. Yes 2. No

37) **Number of years of marriage:** 1. (1-3) 2. (4-6) 3. (More than 6 years)

38) **Age of pregnant woman at marriage:** 1. (< 18 years) 2. (18-35 years) 3. (> 35 years)

II. Hospital Anxiety and Depression Scale :

Please select the appropriate answer by placing a circle			
A	I feel tense or 'wound up': 3. Most of the time 2. A lot of the time 1. From time to time, occasionally 0. Not at all	D	feel as if I am slowed down: 3. Nearly all the time 2. Very often 1. Sometimes 0. Not at all
D	I still enjoy the things I used to enjoy: 0. Definitely as much 1. Not quite so much 2. Only a little 3. Hardly at all	A	I get a sort of frightened feeling like 'butterflies' in the stomach: 0. Not at all 1. Occasionally 2. Quite Often 3. Very Often
A	get a sort of frightened feeling as if something awful is about to happen: 3. Very definitely and quite badly 2. Yes, but not too badly 1. A little, but it doesn't worry me 0. Not at all	D	I have lost interest in my appearance: 3. Definitely 2. I don't take as much care as I should 1. I may not take quite as much care 0. I take just as much care as ever
D	I can laugh and see the funny side of things: 0. As much as I always could 1. Not quite so much now 2. Definitely not so much now 3. Not at all	A	I feel restless as I have to be on the move: 3. Very much indeed 2. Quite a lot 1. Not very much 0. Not at all
A	Worrying thoughts go through my Mind: 3. A great deal of the time 2. A lot of the time 1. From time to time, but not too often 0. Only occasionally	D	I look forward with enjoyment to things: 0. As much as I ever did 1. Rather less than I used to 2. Definitely less than I used to 3. Hardly at all
D	I feel cheerful: 3. Not at all 2. Not often 1. Sometimes 0. Most of the time	A	I get sudden feelings of panic: 3. Very often indeed 2. Quite often 1. Not very often 0. Not at all
A	I can sit at ease and feel relaxed: 0. Definitely 1. Usually 2. Not Often 3. Not at all	D	I can enjoy a good book or radio or TV program: 0. Often 1. Sometimes 2. Not often 3. Very seldom

جامعة النجاح الوطنية

كلية الدراسات العليا

أعراض القلق والاكتئاب لدى النساء الحوامل عن طريق التخصيب في
المختبر (اطفال الانابيب) ومقارنتها مع النساء اللواتي يحملن بشكل طبيعي
ويتلقين الرعاية الأولية في عيادات ما قبل الولادة: "دراسة مقارنة"

إعداد

آلاء قلالوه

إشراف

د. عدنان سرحان

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في تمريض الصحة
النفسية والمجتمعية، بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين.

2019

ب

اعراض القلق والاكتئاب لدى النساء الحوامل عن طريق التخصيب في المختبر (اطفال الانابيب)
ومقارنتها مع النساء اللواتي يحملن بشكل طبيعي ويتلقين الرعاية الاولى في عيادات ما قبل

الولادة: دراسة مقارنة

إعداد

آلاء قلالوه

إشراف

د. عدنان سرحان

الملخص

هذه الدراسة تناولت الحديث عن النساء الحوامل لان الحمل يعتبر من المراحل الصعبة التي تمر بها المرأة في حياتها حيث ان للحمل اثير كبير على حياة المرأة من الناحية النفسية والجمالية والاجتماعية.

هدفت الدراسة الي تقييم مستوى القلق والاكتئاب بين النساء الحوامل عن طريق (IVF) في مراكز الاخصاب خلال فترة الحمل ومقارنتها مع النساء الحوامل بشكل طبيعي اللواتي براجعنا العيادات الحكومية الاولى في شمال الضفة الغربية.

لخصت الدراسة الي ان النساء الحوامل عن طريق (IVF) لديهن قلق (11 مره) اضعاف النساء الحوامل بشكل طبيعي وايضا لديهن اكتئاب (4.5 مره) اضعاف النساء الحوامل بشكل طبيعي بالإضافة الي ان النساء الحوامل عن طريق (IVF) لديهن قلق او اكتئاب (14 مره) اضعاف النساء الحوامل بشكل طبيعي.

كذلك لخصت الدراسة الي ان لابد من اخذ خطوات فعالة لتوفير الدم النفسي للنساء الحوامل خلال فترة الحمل سواء كانت في المراكز الاخصاب وفي العيادات الخارجية.

