Factors affecting the compliance of patients with schizophrenia with their anti-psychotic medication in Hebron district

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Dedication

I dedicate this modest work to all Palestinian patients suffering from schizophrenia; without them this work would not have seen the light.

Thank you.

Ursula Mukarker

Declaration

I, here in, declare that no portion of the work referred to in this study has been submitted in support of an application for any other degree or qualification to this university or any other institution of learning.

Signature: Ursula Mukarker . 21. 12. 2014

Ursula Mukarker

Acknowledgments

First I would like to thank my Lord and Savior, Jesus Christ, whose love for me has always been evident. Because of faith in His words, I can achieve my goals, for it is written, "I can do all things in Christ who strengtheneth me" (Phil.4:13). Thank you Lord.

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Abstract

Background

Non-compliance to anti-psychotic medication is a world wide problem and may be the most challenging aspect of treatment of patients with schizophrenia as it contributes to relapse and re-hospitalization of the patients.

Aim

The aim of the current study is to assess the compliance rate of patients with schizophrenia with their anti-psychotic medication and to identify factors that affect their compliance rate in Hebron Community Mental Health Center for Adults (Beit-Kahel).

Methods

A cross-sectional design was utilized to achieve the purpose of the study. The data collection process was done by using a self-reported questionnaire that consisted of ten sections including socio-demographic data, medical history, patient's knowledge and perception, duration of illness, treatment schedule, patient-doctor relationship, clarity of instruction, regularity on the follow ups, family support and cost of treatment. The questionnaire was filled in by the main researcher and another research assistant for 300 patients attending the Hebron Community Mental Health Center for Adults (Beit-Kahel) who met the inclusion and the exclusion criteria and agreed to participate in the study. The Data collection process was done from 01.04.2012 until 1.12.2012.

Moreover, compliance rate was estimated by using the relapse rate. The relapse rate was assessed by using re-hospitalization, increase in the number of medication, increase in the dose of medication and worsening of symptoms.

Data analysis

Statistical analysis was performed using a statistical package for social sciences (SPSS) Version 20. Descriptive statistics, the Chi-square and fisher exact test (p-

value≤0.05) were used to analyze the data. Also primary logistic regression was used to examine the association between re-hospitalization and some independent variable

Results

Analysis of the patients' characteristics showed for example that the patients' age ranged between 18-76 years of which 41.7% aged from 31 to 45 years. Regarding their gender, 67% were males and 33% were females. Also, more than half of the participants (59.7%) were married and 74.7% were unemployed.

In addition, the main results of the current study revealed good compliance rate with anti-psychotic treatment plan among patients with schizophrenia. For example, 95.3% of the participants had no hospital admissions, 89% had no increase in the number of medication, and 93.3% had no increase in the dose of medication.

Moreover, the findings in general revealed that the patients have good family support and encouragement and positive relationship with the treating doctor. They also showed a variation in their knowledge about their disease and the majority (95.7%) indicated that the drugs' usage instructions were "always or often" clear and simple.

The logistic regression analysis of the study population revealed a significant relationship between compliance rate and duration of illness, stigma and insight. On the other hand gender, age, place of residency, marital status, educational level, work status, income status, number of drugs regimen, daily drugs regimen, regimen interruption, number in change of medication, frequency of doctor visits, clear of instruction, family support and encouragement and medication side effects did not have a relationship with compliance rate.

Conclusion

The findings of the current study revealed high compliance rate with anti-psychotic medication among patients with schizophrenia in Hebron district. This might be related to the patient's good family support and encouragement, positive relationship with the treating doctor, and to clear and simple drugs' usage instructions.

العوامل التي تؤثر في مدى إلتزام مرضى الفصام بالخطة العلاجية الدوائية في محافظة الخليل

الباحث: أورسولا مكركر

المشرف: د. منى حميد

ملخص الدراسة

خلفية الدراسة

تعتبر مشكلة عدم إلتزام مرضى الفصام بالخطة العلاجية الدوائية مشكلة شائعة، وقد تكون التحدي الأكبر في العملية العلاجية لمرضى الفصام، كما أنها تساهم في الانتكاسة المرضية وإعادة الاستشفاء.

هدف الدراسة

أجريت الدراسة الحالية من اجل تقييم مدى إلتزام مرضى الفصام بالخطة العلاجية الدوائية، وكذلك البحث عن العوامل التي تؤثر في مدى التزامهم بتلك الخطة في مركز بيت كاحل للصحة النفسية في مدينة الخليل.

منهجية الدراسة

إستخدمت دراسة كمية مقطعية من أجل تحقيق هذا الهدف. جمعت المعلومات اللازمة للدراسة بواسطة إستبيان مقسم الى عشرة بنود وهي: معلومات اجتماعية عامة، والتاريخ المرضي، ومعلومات عن المرض ونظرة المريض اليه، وفترة المرض، والجدول العلاجي، وعلاقة المريض بالطبيب المعالج، ووضوح تعليمات العلاج، والإنتظام في المواعيد، ودعم العائلة للمريض، وتكاليف العلاج. استخدم الباحث عدة طرق مختلفة لقياس مدى إلتزام المشاركين من خلال إعادة الإستشفاء، وزيادة في عدد الأدوية، وزيادة في كمية الدواء، وزيادة في شدة الأعراض. تم جمع بيانات مدى الإلتزام من خلال ملفات المرضى بالرجوع إلى ثلاثة أشهر من تاريخ تعبئة الإستبيان في الفترة الواقعة ما بين ٢٠١٢/١/١ ولغاية ٢٠١٢/١٢/١.

قام الباحث الأساسي مع الباحث المساعد بتعبئة الإستبيان ل٣٠٠ مراجع من مركز بيت كاحل للصحة النفسية، ممن استوفوا شروط المشاركة في هذا البحث في الفترة الواقعة ما بين ٢٠١٢/٤/١ولغاية ٢٠١٢/١٢/١.

التحليل الإحصائي

إستخدم برنامج الرزم الإحصائية للعلوم الإجتماعية (SPSS) لتحليل العينة، حيث استعملت النسخة ٢٠ من هذا البرنامج. كذلك إستخدم التحليل الوصفي، بالإضافة إلى الكاي المربع (X^2) وفشر المضبوط (fisher exact test) مع درجة دقة ≤ ٠٥,٠ (p-value ≤0.05) لتحليل المعلومات. كما إستخدم تحليل الإرتداد اللوجيستي من أجل فحص العلاقة بين إعادة الإستشفاء وبعض المتغيرات التابعة.

النتائج

أشارت بعض تحليل بيانات المرضى إلى أن أعمارهم تراوحت ما بين ١٨-٧٦، سنة وان٤١,٧% منهم تراوحت أعمارهم ما بين ٣١و٤٥. أما بالنسبة للجندر فقد كان ٦٧% منهم ذكورا بينما ٣٣% كانوا من الإناث. أكثر من نصف المرضى (٥٩,٧%) كانوا متزوجين، ٧,٧٤% منهم عاطلين عن العمل. أيضا أظهرت النتائج الرئيسية لهذه الدراسة بأنه

يوجد التزام جيد لمرضى الفصام بالخطة العلاجية إذ أنه ٩٥,٣% من المشاركين في الدراسة لم يدخلوا المستشفى، و٨٩% لم يكن لديهم زيادة في عدد الأدوية، و٩٣,٣% لم يكن لديهم زيادة في كمية الدواء خلال الثلاث الأشهر السابقة.

من جهة اخرى أظهرت النتائج أن المرضى المشاركين في الدراسة يتمتعون بشكل عام بدعم وتشجيع جيدين من العائلة، وكذلك لهم علاقة ايجابية مع الطبيب المعالج لهم في العيادة، وأظهرت النتائج أيضاً وجود تفاوت في مدى المعرفة لديهم بما يتعلق بمرضهم. كما أن معظم المرضى (٩٥,٧%) قالوا إن التعليمات الخاصة بالعلاج كانت "دائما وغالبا" سهلة وواضحة بالنسبة لهم.

بين التحليل اللوجيستي الإرتدادي الثنائي أن هناك علاقة ذات دلالة إحصائية بين الإلتزام بالخطة العلاجية وطول فترة المرض، والشعور بوصمة العار من المرض، والإستبصار. ولكنه بين أيضا بأنه لا يوجد علاقة ذات دلالة إحصائية بين الإلتزام بالخطة العلاجية وجنس المريض، وعمره، ومكان السكن، والحالة الإجتماعية، ومستوى التعليم، والعمل، والدخل الشهري، وعدد الأدوية، وتكرار زيارة الطبيب، ودعم العائلة، ووجود أعراض جانبية للأدوية، وعدد مرات أخذ الدواء في اليوم، وعدد مرات عدم الإلتزام بالخطة العلاجية.

الخاتمة

أظهرت نتائج الدراسة مستوى إلتزام جيد بالخطة العلاجية الدوائية لدى مرضى الفصام في محافظة الخليل، وقد يعود هذا الإلتزام الجيد لكون المرضى المشاركين في الدراسة يتمتعون بشكل عام بدعم وتشجيع جيدين من العائلة، وكذلك لهم علاقة ايجابية مع الطبيب المعالج لهم في العيادة، وان التعليمات الخاصة بالعلاج كانت سهلة وواضحة بالنسبة لهم.

Chapter One

Introduction

1.1. Introduction

Patient's compliance in schizophrenia is an important factor for guaranteeing a successful maintenance of treatment and prevention of a relapse, yet compliance with medication is a major problem for individuals with schizophrenia as the majority of patients experience multiple relapses during the course of the illness (Masand et al., 2009). It indicates that ninety percent of patients with schizophrenia suffer successive relapse and finally never experience full recovery (Linden et al., 2001). Non-compliance with drug treatment among mentally patients is wide-spread; the reported incidence of non-compliance with antipsychotic medication ranges from 11 to 80% depending on the population studied and medical regimens (Misdrahi et al., 2002).

The rate of relapse in schizophrenia can be reduced from about 75 percent to 20 percent by anti-psychotic medication (Linden et al., 2001). Yet the failure of many patients suffering from schizophrenia to take their medication as prescribed severely undermines the benefits of this sort of medication (Gottlieb, 2000). Therefore, learning how to foster and ensure patient compliance is a primary therapeutic task in the treatment of schizophrenia; and knowledge of how to improve compliance could contribute as much to treatment as the introduction of neuroleptics itself did (Linden et al., 2001; Lehman et al., 2004).

Although compliance cannot be accurately predicted or detected by the physician, risk factors can be identified. The main objective of the present study is to assess the compliance rate and to identify the factors that may affect the compliance of Palestinian patients with schizophrenia with their anti-psychotic medication.

1.2. Problem Statement

Schizophrenia is a serious mental illness that can have devastating consequences to the individual. The global prevalence rate for schizophrenia is estimated at 0.2% to 1.5% and it is almost equivalent for men and women (Durand et al., 2006). For example, around 51 million people around the world suffer from schizophrenia and ninety percent of the patients suffer successive relapses and never experience full recovery (Gaeble and Pietzcker, 1984). Also according to the Palestinian Ministry of Health, there were 179 diagnosed new cases of schizophrenia in Palestine in the year 2013, 33 of them were from Hebron alone (Palestinian Ministry of Health, 2013).

After being discharged from the hospital, patients usually return back to the hospital after a period of time as a result of a decline in their psychological well-being and their non-compliance to their treatment plan. Non-compliance with prescribed medication is a major issue confronting the mental health professions (Fleishacker et al., 2003) and particularly among schizophrenic patients, which lead to frequent re-hospitalization.

The World Health Organization (WHO) has estimated that only 50% of the patients with schizophrenia do complete the prescribed long-term therapy, which puts the patient's health at high risk for relapse (WHO, 2003). The rate of non-adherence with antipsychotics in schizophrenia varies between studies, reflecting differences in the populations studied and the methodology used in terms of the definition and measurement of adherence and the period of time over which it is assessed. For example, a systematic review of 39 studies reported a mean rate of medication non-adherence in schizophrenia of 41%. (Lacro, et al., 2002).

Also, there can be serious consequences of non-compliance. For example, non-compliance is one of the most common causes of relapse (Saba et al., 2007). Relapse can be a serious setback in a patient’s recovery process, as the patients who relapse can often take over a year to return back to their pre-relapse level of social functioning (Johnson et al., 1983). In addition, relapses due to non-compliance tend to be more severe, including higher rates of attempted suicide and other violent acts. On a global scale, it is estimated that non-compliance in schizophrenia accounts for around 50% of the annual costs resulting from re-hospitalization (Acosta et al., 2012).

A number of factors have constituted the focus of research into this area. Some of the factors identified from the studies and reviews are socio-demographic data, duration of illness, cost of treatment, family support, treatment schedule, side effects of medication, clarity of medication instruction, patient's knowledge and perception of their dieses, regularity on appointments and follow up, patients-physician relationship and stigma. (Ruscher et al., 1997; Grunebaum et al., 2001; Löffler et al., 2003; Perkins, 2002; Rettenbacher et al., 2004; Hoffer et al., 2005; Tsang et al., 2008; Baby et al., 2009).

In Palestine, there has been a lack of studies that have examined the factors that affect medication compliance among Palestinian patients with schizophrenia. Therefore, this study might be the first to examine these factors.

1.3. Importance of the study

There is a lack of studies that assess the factors that influence the compliance of patients with schizophrenia with anti-psychotic medication in Palestine or even in the Arabic world. In addition, studies on medication non-compliance have concentrated on targeting in-patients. Therefore, a study in primary health care sector will provide us with in-depth understanding of the practice made in out-patients settings. Also, the sample size of the study is higher than in other similar studies; the sample size of 300 patients will provide us with a better comprehension in assessing factors affecting compliance with treatment plan for out-patients with schizophrenia. Moreover, the current study tackled ten factors affecting compliance compared to previous studies that only assessed less than five factors. Due to this aspect, the findings of the present research will give us a broader understanding of the factors affecting compliance in one sole study.

The result of this study may help policy makers and health professional who are responsible for planning the health care system to develop, and to design interventions and strategies to improve the compliance rate among patients with schizophrenia and to save huge amounts of money that spent yearly on this disorder.

1.4. The main aim of the study

The main aims of the study are to assess the compliance rate and to identify the factors influencing the compliance of patients with schizophrenia with their anti-psychotic medication in Hebron area.

1.5. Specific Objective

- To identify the factors that may affect the compliance rate of patients with schizophrenia with their anti-psychotic medication such as socio-demographic (age, gender, education level…etc) and duration of illness, cost of treatment, family support, medical history of the patient, treatment schedule, side effects of medication, clarity of medication instruction, patient's knowledge and perception of their dieses, stigma, regularity on appointments and follow up, patients-doctor relationship.

- To assess the relation between independent variables such as socio-demographic (age, gender, education level…etc.), duration of illness, cost of treatment, family support, medical history of the patient, treatment schedule, side effects of medication, clarity of medication instruction, patient's knowledge and perception of their dieses, regularity on appointments and follow up, patients-doctor relationship, stigma and the dependent variable (compliance rate).

1.6. Research questions

- What are the factors that influence compliance with anti-psychotic medication and treatment plan among patients with schizophrenia in Hebron?

- What is the compliance rate of patients with schizophrenia with their anti-psychotic medication and treatment plan in Hebron?

1.7. Feasibility of the study

- Ethical approval was obtained from Al-Quds University and from the Palestinian Ministry of Health to conduct the study.

- The staff of Hebron Community Mental Health Center for Adults (Beit-Kahel) showed their interest in the study and their readiness to facilitate data collection in the center.

1.8. Limitations of the study

- This current study used a cross-sectional design with self-reported questionnaires, which leads to some limitations. The snapshot nature of the cross-sectional design makes it easier to undertake, but it is not able to determine causality. Cross sectional studies do not provide an explanation for their findings, as they can only establish a relationship between factors. In addition, this design has limitations in terms of the possibility of generalization of the results to a wider population as it measures only the prevalence of the outcomes and the determinants in one population and over a short period of time (Monsen and Van Horn., 2008).

- Data collection depends on self-reported questionnaires, so the accuracy of data may be questionable. The patient may hesitate to express certain thoughts or feelings or may change their responses in order to please the researcher Also; the results depend on patients' memories of past events, which are not always reliable. In addition, Self-report studies are inherently biased by the person's feelings at the time they filled out the questionnaire (Mitchell, 2000).

- The data collection was done by two researchers that could lead to differentiating styles of gathering information from the patients. However, training about the purpose of the study, the clarity of questionnaire items, the inclusion and exclusion criteria of the study, in addition to the ethical consideration was done to the research assistant by the main researcher, in order to maintain consistency in obtaining data from the patients.

- The medical team helped the researcher in selecting what they considered to be "mentally stable" participants for this study. This might exclude other none mentally stable patients or patients with severe symptoms of schizophrenia.

- Furthermore, the restriction of the sample to a government primary healthcare center in the Hebron area may limit the generalization of the findings to other areas in Palestine or other healthcare institutions and providers.

- The compliance rate was assessed by obtaining information from the patient's medical files. Therefore, the accuracy of information in the patient's file may be incomplete due to possible overlook by the doctor. Also, in some cases, doctors in Beit-Kahel center may not be informed if the patients are admitted to the mental hospital in Bethlehem, so such information may not be recorded in the patients' medical files at Hebron Community Mental Health Center for Adults (Beit-Kahel).

1.9. Summary

- Antipsychotic medication non-compliance of patients with schizophrenia is a challenging aspect of successful treatment and it can cause clinical and economic burdens.
- The aim of the current study was to assess the rate of compliance with anti-psychotic medication and treatment plan among patients with schizophrenia who attended Hebron Community Mental Health Center for Adults (Beit-Kahel) and the factors that affect their compliance.
- The chapter also presented the problem statement, the study objective, research questions, feasibility and the limitations of the current study.

Chapter Two

Literature Review

2. 1. Introduction

Chapter two reviews the literature about schizophrenia such as etiology, types and symptoms, treatment, prevalence and incidence, compliance rate, relapse rate and factors that affect medication non-compliance.

Schizophrenia is derived from the Greek roots; schizo (split) and phrene (mind). It was commonly misunderstood as a split or multiple personality. However, it was meant to describe the fragmented thinking of people with the disorder (Kinter, 2009). Over time, the definition of schizophrenia has evolved as the types of mental diseases continue to be defined. According to the DMS VI-TR, schizophrenia is defined as a chronic, more or less debilitating illness characterized by perturbation in cognition, affect and behavior, all of which have a bizarre aspects such as delusions and hallucinations. Schizophrenia can be traced back to 2000 years B.C.E., however the illness was not identified as more than just “madness” until 1887 (DSM-IV-TR, 2000).

Emil Kraepelin was a psychiatrist who is the best known for identifying and naming “dementia praecox”. The name was later changed to "schizophrenia" by Eugen Bleuler who was the first to separate the symptoms of schizophrenia into positive and negative symptoms (Kinter, 2009). Both Bleuler and Kraepelin subdivided schizophrenia into categories, based on the prominent symptoms and prognosis. Also, five types were delineated in the DMS-III: disorganized, catatonic, paranoid, residual, and undifferentiated. The first three categories were originally proposed by Kraepelin. These classifications continue to be researched and are still employed in DSM-IV-TR (2000). However, they have not been proven reliable when predicting the outcome of the disorder. Miller et al. (2010) used other systems to classify the different types of the disorder, such as "positive" vs "negative" symptoms, severity of symptoms over time, and the incidence of other mental disorders and syndromes.

2.2. Etiology of Schizophrenia

There are a range of concepts regarding the causes of schizophrenia (Peate and Chelvanayagam, 2006). One of the main theories of the causes of schizophrenia is the genetic theory. There are several genes are associated with an increased risk of schizophrenia, but that no gene causes the disease by itself. It is found that people with schizophrenia tend to have higher rates of rare genetic mutations. These genetic differences involve hundreds of different genes and probably disrupt brain development. For example, if a sibling has been diagnosed with schizophrenia, there is an 8% risk for sibling experience schizophrenia. If one parent has schizophrenia, there is a 13% risk and if both parents have schizophrenia and there is 40% risk that the child will experience the disorder (Fontaine, 2003; Hochman and Lewine, 2004). Also, a monozygotic (identical) twin of a person with schizophrenia has the highest risk a 40 to 50 percent chance of developing the illness. People who have second-degree relatives (aunts, uncles, grandparents, or cousins) with the disease also develop schizophrenia more often than the general population. By comparison, the risk of schizophrenia in the general population is about one percent (Castellano-Hoyt, 2003).

The second main theory is the biological theory (Eby and Brown, 2005) which states that there are differences in the structural, chemical and functional aspects of the brains of the people with schizophrenia. The use of antipsychotic medications supports this theory and that people with schizophrenia have an excess of the brain chemical dopamine, which can be reduced with antipsychotic medications by blocking its production (Healy, 2005).

Third, events that adversely affect fetal development are now considered to be potential environmental triggers of genetic vulnerability. It is also plausible that they are sufficient, on their own, to produce vulnerability to schizophrenia. Also, obstetrical complications (OCs) have an adverse impact on the developing fetal brain, and numerous studies have shown that schizophrenia patients are more likely to have a history of OCs (Buka et al. 1993, Dalman et al.1999, McNeil et al. 2000). Included among these are pregnancy problems, such as toxemia and preeclampsia, as well as labor and delivery complications. A review of the OC literature by Cannon (1997) concluded that, among the different types of OCs, labor and delivery complications, which are often associated with hypoxia (fetal oxygen deprivation), were most strongly linked with later schizophrenia.

Another prenatal event that has been linked with increased risk for schizophrenia is maternal infection. The risk rate for schizophrenia is elevated for individuals born shortly after a flu epidemic (Barr et al. 1990, Murray et al. 1992) or after being prenatally exposed to rubella (Brown et al. 2001). Also, a disproportionate number of schizophrenic patients are born during the winter months (Bradbury and Miller 1985, Torrey et al. 1997). “This timing may reflect seasonal exposure to viral infections, which are most common in late fall and early winter. Thus, the fetus would have been exposed to the infection during the second trimester. The second trimester is an important time for brain development, and disruptions during this stage may lead to developmental abnormalities” (Craighead et al., 2008).

In addition, the diathesis-stress theory is one well-established explanation for schizophrenia, proposing that schizophrenia is the result of a combination of environmental and biological/genetic factors. According to this theory, schizophrenia symptoms are triggered or worsened when environmental stressors (stress) act upon a biological vulnerability (diathesis) to the disease (Joseph, 2004; Roeckelein, 2006)

According to the theory, there are many different types of stressors--such as biological, social, and psychological--that may precipitate the development of schizophrenia. Schizophrenia has a genetic or hereditary component, and the presence or absence of certain life stressors could explain why not all people who are genetically vulnerably go on to develop the disease (Joseph, 2004; Roeckelein, 2006).

Moreover, drugs do not directly cause schizophrenia, but studies have shown drug misuse increases the risk of developing schizophrenia or a similar illness. Certain drugs, particularly cannabis, cocaine, LSD or amphetamines, may trigger some symptoms of schizophrenia, especially in people who are susceptible. Using amphetamines or cocaine can lead to psychosis and can cause a relapse in people recovering from an earlier episode (Siegel and LaRiena, 2010).

Also, traumatic head injury, such as the kind sustained in a fall or a traffic accident, may make people more likely to develop schizophrenia, but it is not known why this happens. Research has also suggested that head injuries during childhood could lead to the development of schizophrenia in people who are already prone to it (Schwarzbold et al., 2008).

Finally, approximately three percent of people who are alcohol dependent experience psychosis during acute intoxication or withdrawal. The mechanism of alcohol-related psychosis is due to distortions to neuronal membranes, gene expression, as well as thiamin deficiency. Also, alcohol abuse via a kindling mechanism can occasionally cause the development of a chronic substance induced psychotic disorder, i.e. schizophrenia (Puri, 2012).

2.3. Schizophrenia types and symptoms

In General schizophrenia is often described in the terms of positive and negative symptoms (Sims A, 2002). Positive symptoms are those that most of the individuals do not normally experience but are present in people with schizophrenia. They can include delusions, disordered thoughts and speech, and tactile, auditory, visual, olfactory and gustatory hallucinations, typically regarded as manifestations of psychosis (Kneisl et al., 2009). Positive symptoms generally respond well to the medication (DSM-IV-TR, 2000). Negative symptoms are deficits of normal emotional responses or of other thought processes, and respond less well to medication (Carson, 2000). They commonly include flat or blunted affect and emotion, poverty of speech (alogia), inability to experience pleasure (anhedonia), lack of desire to form relationships (asociality), and lack of motivation (avolition). The negative symptoms contribute more to poor quality of life, functional disability, and the burden on others than do the positive symptoms Carson, 2000. People with prominent negative symptoms often have a history of poor adjustment before the onset of illness, and their response to medication is often limited. (Carson, 2000, Smith et al., 2010).

Additionally, cognitive symptoms are often detected only when neuropsychological tests are performed. They include the poor "executive functioning" (the ability to absorb and interpret information and make decisions based on that information), inability to sustain attention, and problems with "working memory" (the ability to keep recently learned information in mind and use it right away) (Harry Eiss; 2008 Ibrahim and Tamminga, 2012; Harvey; 2013). Cognitive impairments often interfere with the patient's ability to lead a normal life and earn a living. They can cause great emotional distress (Rassool; 2008).

Also, the use of antipsychotics is hindered by the frequent occurrence of metabolic and cardiovascular side effects, resulting in worsened quality of life and greater mortality as a

result of cardiovascular and cerebrovascular disorders in schizophrenia patients than the comparable general population. The various antipsychotics induce extrapyramidal symptoms, impaired glucose and lipid metabolism, weight gain, hypertension and arrhythmias, with variable frequency (Scigliano and Ronchetti, 2013).

According to DSM-IV-TR (2000), there are five types of schizophrenia and each based on the type of symptoms that the person has at the time of assessment.

Paranoid schizophrenia: The individual is preoccupied with one or more delusions or many auditory hallucinations but does not have symptoms of disorganized schizophrenia.

Disorganized schizophrenia: Prominent symptoms are disorganized speech and behavior, as well as flat or inappropriate affect. The person does not have enough symptoms to be characterized as suffering from catatonic schizophrenia.

Catatonic schizophrenia: The person with this type of schizophrenia primarily has at least two of the following symptoms: difficulty moving, resistance to moving, excessive movement, abnormal movements, and/or repeating what others say or do.

Undifferentiated schizophrenia: This is characterized by episodes of two or more of the following symptoms: delusions, hallucinations, disorganized speech or behavior, catatonic behavior or negative symptoms, but the individual does not qualify for a diagnosis of paranoid, disorganized, or catatonic type of schizophrenia.

Residual schizophrenia: While the full-blown characteristic positive symptoms of schizophrenia (those that involve an excess of normal behavior, such as delusions, paranoia, or heightened sensitivity) are absent, the sufferer has a less severe form of the disorder or has only negative symptoms (symptoms characterized by a decrease in function, such as withdrawal, disinterest, and not speaking).

2.4. Prevalence and incidence of schizophrenia and its burden

The term 'prevalence' of schizophrenia usually refers to the estimated population of people who are living with schizophrenia at any given time (Tasman et al., 2012). A commonly accepted prevalence rate for schizophrenia is that it affects approximately 1% of the population at any time (Lieberman et al., 2012). Moreover, data on the prevalence of psychotic disorders reported by Arab countries varied between 0.7% and 5.6% depending

on the period assessed for prevalence (Saab et al., 2011). In a study conducted by Ghuloum et al. (2011) the prevalence rate of schizophrenia in Qatari population attending primary health care settings was 3.6%. The incidence (the number of new cases annually) is about 1.5 per 10,000 people (McGrath et al., 2008). Slightly more men are diagnosed with schizophrenia than women (on the order of 1.4:1) (Abel et al., 2010), and women tend to be diagnosed later in life than men. There is also some indication that the prognosis is worse in men (Usall et al., 2003; Grossman et al., 2006). The incidence rate in Palestine in the year 2010 was 12.2 per 100.000 (Palestinian Ministry of Health, 2013).

Moreover, according to the Global Burden of Disease Study, schizophrenia causes a high degree of disability, which accounts for 1.1% of the total DALYs (disability-adjusted life years) and 2.8% of YLDs (years lived with disability) (Roesster, 2005). Also, WHO (2001) has reported that schizophrenia is listed as the 8th leading cause DALYs worldwide in the age group 15-44 years. In addition to the direct burden, there is considerable burden on the relatives who care for the sufferers.

Although the disease does not affect a large portion of the global population, it is an important social and health care issue; because of the high costs of mortality, morbidity and social cost (Kinter, 2009).

As mentioned previously, schizophrenia is associated with two significant primary cost components, direct and indirect costs; direct costs such as inpatient hospitalizations, outpatient visits, emergency department visits, office-based physician visits, home healthcare visits, and prescription medications and indirect cost such as caregivers' costs and cost of lost productivity due to missed work days, reduced employment, and suicide (Rajiv, 2012). The broad range of cost associated with schizophrenia is an indicative of how distressing and devastating schizophrenia is. For example in the United States, schizophrenia accounts for 75% of all mental health expenditures, and over 40% of medicaid reimbursements (Kinter, 2009). Even in countries with lower rates of inpatient admission, schizophrenia accounts for between one and two thirds of the total hospitalization costs. In general, it is found that the costs of schizophrenia are high and persistent across all countries based on the chronicity of the disease, the prevalence, the early age of onset, the repeated hospitalization, and the subsequent reduced quality of life (Kinter, 2009).

Finally, patient who are diagnosed with schizophrenia have higher mortality rates than the general population which is two times as high in individuals with schizophrenia than in the general population (Kinter,2008).This leads to the labeling of schizophrenia as a ”life-shorting disease” (Leucht et al., 2007). Also, suicide is common among those diagnosed with schizophrenia; and 5.13 percent of patients with schizophrenia successfully commit suicide (Pompili et al., 2007). In addition, patients with schizophrenia have increased morbidity due to the other causes such as cardiovascular diseases, metabolic disorders, urological problems, male genital disease and obstetric complications (Leucht et al., 2007).

2.5. Treatment of Schizophrenia

There are different approaches to treat schizophrenia such as medication and psychological treatment. Antipsychotic medications are used to treat schizophrenia and schizophrenia-related disorders (Ritsner, 2011). Some of these medications have been available since the mid-1950's, and they are called conventional "typical" antipsychotics. Some of the more commonly used medications include chlorpromazine (Thorazine), Haloperidol (Haldol) and Perphenazine and Fluphenazine. In the 1990's, new antipsychotic medications were developed which are called second generation, or "atypical" antipsychotics. One of these medications was clozapine (Clozaril). It is a very effective medication that treats psychotic symptoms, hallucinations, and breaks with reality. However, clozapine can sometimes cause a serious problem called agranulocytosis, which is a decrease of the white blood cells that help a person to fight infection. Other atypical antipsychotics were developed and found to be effective and produce less neurological side effects, such as Risperidone (Risperdal), Olanzapine (Zyprexa), Quetiapine (Seroquel) and Ziprasidone (Geodon) (Rubin et al., 2011).

Another treatment approach than medication is the psychological treatment; Despite the successful antipsychotic treatment, many patients with schizophrenia have difficulty with motivation, activities of daily living, relationships, communication skills, and lack of social and work skills and experience. Psychosocial therapy helps people with schizophrenia, but only after they are stabilized on medication to better understand their schizophrenia and to learn how to cope and live independently. Psychosocial schizophrenia treatment may include:

Individual psychotherapy: This involves regular sessions between the patient and the therapist focusing on the past or the current problems, the thoughts, the feelings, or the relationships. Thus, via contact with a trained professional, people with schizophrenia become able to understand more about their illness, to learn about themselves and to better handle the problems of their daily lives. They become better able to differentiate between what is real and what is not and can acquire beneficial problem-solving skills (Pope, 2008).

Rehabilitation: rehabilitation may include job and vocational counseling, problem solving, social skills training, education and money management. Thus, patients learn skills required for successful reintegration into their community following discharge from the hospital (Pope, 2008).

Family education: it was found that people with schizophrenia who have involved families fare better than those who battle the condition alone. Educating family members about the disease and its nature, prognosis and treatment showed positive impact on the patient's health condition (Pope, 2008).

Self-help groups: provide an opportunity for patients to share ideas, discuss concerns about medications, and learn from others with similar problems (Strahl, 2011).

Substance abuse treatment: providing medical and psychosocial interventions that address substance abuse should be an integral part of treatment as about 50% of individuals with schizophrenia suffer from some kind of substance abuse dependence.

Social skills training: it involves teaching clients ways to handle social situations appropriately. It often involves the person scripting (thinking through or role-playing) situations that occur in social settings in order to prepare for those situations when they actually occur. This treatment type has been found to help people with schizophrenia to resist using drugs of abuse, as well as improve their relationships with health-care professionals, and with people at work and in their life (Bellack, 2004).

Cognitive behavioral therapy (CBT): it is a reality-based intervention that focuses on helping a client understand and change patterns that tend to interfere with his or her ability to interact with others and otherwise function. Except for people who are actively psychotic, CBT has been found to help individuals with schizophrenia to decrease

symptoms and to improve their ability to function socially. This intervention can be done either individually or in group sessions (Nelson, 1987).

2.6. Compliance and relapse rate in schizophrenia

In the context of health care, compliance can been defined as the extent to which the patient's actual history of drug administration corresponds to the prescribed regimen (Vermeer et al., 2001). Compliance is a word often used in clinical settings where for the clinicians, the patients, and the families, it remains one of the most vexing challenges in psychopharmacology. Medication non-compliance can be defined as the "failure to follow the prescribed medication regimen. It can also be manifested in several ways: a) failure to fill the prescription; b) filling the prescription but failing to take the medication; c) taking only a portion of the prescription; and d) not flowing the frequently or dose instruction of the prescription (Buckaley et al., 1986). Noncompliance is a common phenomenon in the mental and medical conditions. For example, medication noncompliance rates of 55% to 71% have been reported among patients with arthritis (Berg, et al. 1993), 45 to 83 percent for patients with seizure disorders (Shope, 1988), and 20% to 75% for patients with bipolar affective disorder (Elixhauser et al., 1990). Also, it was found that the medication compliance rate for the non-psychiatric illnesses is 76%, while that for the psychiatric illnesses is 58% (Awad, 2004). More specifically, about half of the patients with schizophrenia are non-adherent to treatment (Hudson et al., 2004; Valenstein et al., 2004).

As schizophrenia is a chronic and disabling illness that affects approximately 1% of the world's population, it is often accompanied by relapse even while on treatment (Gelder et al., 2000). Relapse rates vary from 50% to 92% and are similar in the developed and the developing countries, despite the former having well-established mental health services. Relapse in schizophrenia is broadly recognized as the reemergence or the worsening of psychotic symptoms (Suzuki et al., 2003).

More specifically, certain criteria are used to define relapse; they include aggravation of positive or negative symptoms, hospital admission in the past 6 months, and more intensive case management and/or a change in medication. (Almond et al., 2004). Relapse may result in hospitalization, treatment resistance, and cognitive impairment owing to progressive structural brain damage, personal distress, incarceration, and interference with rehabilitation efforts (Piggot et al., 2003). It increases the economic

burden on health care systems because of its associated morbidity and re-admissions to the hospital. The prevention of relapse could have significant therapeutic and socio-economic implications (Almond et al., 2004, Knapp et al., 2004).

The factors that are commonly associated with relapse include poor adherence to treatment, substance abuse, co-morbid psychiatric illness, a co-morbid medical and/or surgical condition, stressful life events, and the treatment setting (DSM-IV-TR, 2000; Harris et al., 2005).

2.7. Factors that affect medication non-compliance

The problem of poor adherence to anti-psychotic medication regimen has been a matter of concern to the professional for years. According to the World Health Organization (WHO, 2003) only about 50% of patients with mental illness living in developed countries, follow treatment recommendations. Major barriers to compliance are thought to include various factors (WHO, 2003).

Many studies have been conducted to assess factors that affect the compliance of schizophrenic patients with their treatment plan (Ruscher et al., 1997; Grunebaum et al., 2001; Löffler et al., 2003; Perkins, 2003; Rettenbacher et al., 2004; Hoffer et al., 2005; Tsang et al., 2008; Baby et al., 2009). The studies have indicated a correlation between compliance and various variables such as socio-demographic data, duration of illness, cost of treatment, family support, treatment schedule, clear instruction of treatment, patient's knowledge and perception of the disease, regularity on appointment and follow – up, patient- physician relationship, medical history of the patient, stigma and insight.

For example, a study conducted in Malaysia by Razali and Yahya (1995) to assess the compliance with drug regimens and follow-up visits of 225 known cases of relapsed schizophrenia. About 27% of the patients met the criteria for good compliance. The compliance was found to be significantly related to the patients' view of usefulness of the medication, treatment duration of less than 5 years, dosage schedule of once or twice per day and the supervision of medication at home. Patients with poor compliance who were prescribed drug dosage of not more than twice per day throughout follow-up and underwent counseling to enhance treatment compliance had a significantly lower relapse rate than the controlled group at the end of 1 year of follow-up. The importance of family

support and understanding patients' cultural background in ensuring good compliance was highlighted.

Moreover, a study by Kemp and David (1996) was conducted to assess psychological predictors of insight and compliance in psychotic patients. In this study, seventy-four consecutive acutely psychotic in-patients who were recruited for a randomized controlled trial of compliance therapy were given a battery of neuropsychological tests, along with a comprehensive clinical assessment, before and after the intervention. The result of this study showed that performance on neuropsychological tests improved during the patients' admission and treatment in hospital, as did symptoms and levels of insight. Cognitive function showed no relationship to insight and compliance initially, and very little after the intervention. Factors related to insight and compliance prior to discharge included: diagnosis, attitudes to medication, side-effects, being a detained patient, and whether or not compliance therapy was given.

Also, Ruscher et al. (1997) conducted a study in Canada to investigate the attitude towards medication and the factors affecting medication compliance in a sample of 148 psychiatric patients. Structured interviews assessed the attitudes about medication; history of compliance, and other relevant clinical and psychosocial variables were applied. Findings revealed that 58% subjects expressed positive attitudes towards medication in general. 27% believed that their illness was biologically or chemically based and a large proportion attributed their illness to situational factors, including stress (24%) and family problems (12%). Also, 34% subjects said that they required medications to get better and approximately half of the subjects previously either changed their medication regimen or discontinued their medication. Opposition to the idea of taking medication, belief that the medication did not work, and physical side effects were the most frequent reasons for stopping treatment. Previous patient-initiated changes in the medication regimen, education level, and inpatient or outpatient status were the only variables associated with the noncompliance.

Moreover, a pilot study was conducted by Grunebaum et al. (2001) in the USA to examine the association between medication adherence and level of supervision and other environmental and clinical variables among patients with schizophrenia and related psychotic disorders living in supported housing. A convenience sample of 74 adult residents with schizophrenia and related psychotic disorders (DSM-IV criteria) living in 4

supported housing facilities in New York City were assessed by their treating psychiatrist for medication cessation during the previous month. Demographic characteristics, medications, supervision, global function as measured by the Global Assessment of Functioning (GAF), and substance abuse were also assessed. A priori hypotheses were that regimen complexity would be directly and medication supervision would be inversely related to medication non-adherence. Result have shown that lack of direct medication supervision, negative medication attitude, and lower GAF score were associated with increased medication non-adherence in the recent past.

Also a study by Perkins (2002) which was a MEDLINE search for the years 1980-2002 using combinations of the keywords schizophrenia, compliance, adherence, antipsychotics, tolerability, and side effects was used to identify articles investigating the factors influencing compliance in schizophrenia in the USA. Findings of the research have revealed that there are many factors influence compliance, including those that affect patients' beliefs about their illness and the benefits of treatment (e.g., insight into illness, belief that medication can ameliorate symptoms), perceived costs of treatment (e.g., medication side effects), and barriers to treatment (e.g., ease of access to treatment, degree of family or social support). Medication side effects that are distressing to patients and linked to noncompliance include extrapyramidal side effects, neuroleptic dysphoria, akathisia, sexual dysfunction, and weight gain. Compliance can be improved by cognitive-behavioral therapies, such as compliance therapy, and other psychosocial interventions associated with improved social functioning and a lower risk of re-hospitalization. Treatment adherence may also be improved by use of atypical antipsychotics with few perceived side effects.

Further, a follow-up study was conducted by Löffler et al. (2003) involving a sample of patients with schizophrenia currently undergoing psychiatric treatment in the city of Leipzig. The sample consisted of 307 patients who were asked about their subjective reasons for medication compliance or noncompliance by administering the Rating of Medication Influences (ROMI) Scale. Result showed that the perceived benefit from medication proved to be the main reason for patients' compliance with antipsychotic treatment. Respectively, patient-reported noncompliance was mainly explained by the negative side effects of medication. However, there were no statistically significant differences in responses between the patients receiving conventional versus second-

generation antipsychotics. A positive relationship with the therapist and the positive attitude of significant others toward neuroleptic treatment contributed to the patients' medication compliance. The reasons for noncompliance with the neuroleptic treatment were the lack of the acceptance of the necessity of the pharmacological treatment and the lack of insight into the disease. The results emphasize the importance of psycho-education in enhancing patient's compliance with their neuroleptic treatment.

Furthermore, one cross sectional study was conducted in Austria by Rettenbacher et al. (2004) to assess the compliance rate among patients with schizophrenia, psychopathology, side effects, and patients' attitudes toward the illness and medication. The researchers investigated the influence of several factors including patients' attitude towards the illness and medication, specifically antipsychotic medication; adverse effects; and attitudes of caregivers and relatives towards the illness and medication. The study sample consisted of 61 patients suffering from schizophrenia (ICD-10 diagnosis) of at least 1-year's duration whose discharge from the inpatients ward was at least 6 weeks prior to the inclusion in the study. Study instrument included a semi-structured compliance interview, the Positive and Negative Syndrome Scale, the Udvalg for Kliniske Undersogelser Side Effect Rating Scale, the St.Hans Rating Scale and the Hillside Akathisia Scale. Data were collected from May 1998 to December 2001, and the findings indicated that 52.5% (N=32) of the 61 investigated patients were fully compliant, 39% (N=24) were partially compliant, and only 8.2% (N=5) were noncompliant. Result showed that there is a positive correlation between compliance and the patients' feeling of the positive effect of the drug and the negative symptoms.

Another cross sectional study was conducted by Rettenbacher et al. (2004) to investigate the attitudes towards mental illness and antipsychotic medication among patients with schizophrenia and the medical and the non-medical professionals who were involved in their treatment by using a semi structured interview. An array of 24 outpatients with schizophrenia, 21 psychiatrists, 26 nurses and 42 non-medical health professionals were investigated. Results showed that compliance rate was 54.2 %; partial compliance was 8.3 % and non-compliance was 37.5 % among the patients who were investigated. More patients than carers judged other disorders like epilepsy and diabetes to be worse than schizophrenia. Patients stated more often that they would not encourage a relative to take antipsychotic medication.

Moreover, a study was conducted by Dilbaz et al. (2006) in Turkey to examine the compliance to antipsychotic treatment in schizophrenia and schizoaffective disorder, and 174 patients with schizophrenia or schizoaffective disorder receiving treatment in acute or out-patient settings were interviewed for compliance to antipsychotic treatment using a questionnaire. The result of the study showed that patient non-compliance was 25% in long period and 51% in acute period. For both periods, major causes for noncompliance were denial of disease and sedative effects of the drugs

In addition, a cross sectional study was conducted in Hong Kong by Tsang et al. (2008) to examine the medication compliance of people with schizophrenia in relation to their self-stigma, insight, attitude towards medication, and socio-demographic status. Eighty-six Chinese adults with schizophrenia were recruited from the psychiatric hospitals and community settings for this study. The findings suggested that the stereotype agreement of self-stigmatization and attitude towards medication were moderately correlated with medication compliance. Poor insight and living alone were found to be the significant predictors of medication compliance based on regression analysis. Insight was identified to be the strongest predictor of compliance which accounted for 68.35% of the total variance. The author concluded that although self-stigma is the only moderately linked variable with medication compliance; its effects on medication-induced stigma could not be ignored.

Another study was carried out in India by Baby et al. (2009) to assess the attitudes and reasons of medication compliance and noncompliance among patients with schizophrenia attending outpatients in India and to examine the prevalence and factors effecting noncompliance. Seventy five adult patients with schizophrenia and accompanying 75 family members attending the outpatient services of department of psychiatry, All India Institute of Medical Sciences (AIIMS), New Delhi from June to November 2006 of, were recruited for the study. Those patients with duration of illness less than 2 years and who are not prescribed any antipsychotics for the past 6 months were excluded from the study. All patients were diagnosed as schizophrenia by the treating psychiatrist as per ICD 10 diagnostic criteria (WHO, 1992) and are registered in the psychiatry department for the past two years. The results of the study showed that out of 75 patients in the study; 46 patients are compliant and 29 patients are noncompliant to the medication and treatment. Hence the prevalence of non-compliance to medication is 38.7%. The patients were

defined as compliant, if they take their medications in right doses, frequency as prescribed by the treating psychiatrist more that 23days or 75% of days in the past one month and were defined as noncompliant if they do not take their medications in right doses, frequency as prescribed by the treating psychiatrist or misses the medication for more than seven days continuously or 25% of days in the past one month.

In addition, in Korea, a follow up study was conducted in 2011 by Jung et al. to evaluate factors affecting treatment discontinuation and treatment outcome, after 10 years, in patients with schizophrenia. Among hospitalized patients between 1997 and 1999, 191 patients were given continuous follow-up service. They examined the clinical characteristics and outcome of patients who remained in treatment. Regression analyses were used to find any clinical factors affecting treatment discontinuation. The finding of the study revealed that one hundred thirty-three patients (71.12%) discontinued the treatment. The treatment retention group contained more female patients, paranoid-type patients, patients who had shown self-harming behavior, patients receiving clozapine, and patients with good medication compliance. The recovery rate was 25%. However, 42.3% did not have gainful employment, and most patients couldn't live independently.

Moreover, a study by Amr et al. (2013) was conducted in Egypt to determine whether insight, spirituality and patient beliefs about the necessity and concerns about medication were associated with adherence among those presenting with schizophrenia in an outpatient facility. At the end of a routine follow up with their psychiatrist, patients completed questionnaires, including the Schedule for the Assessment of Insight (SAI-E), Morisky Medication Adherence Scale (MMAS), Arabic Daily Spiritual Experience Scale (DSES) and Beliefs about Medicines Questionnaire (BMQ). A sample of 92 patients with schizophrenia was studied. On the basis of the MMAS results, 24 (26%) patients were categorized as medication adherent and 68 (74%) as medication non-adherent. Logistic regression analysis showed that the SAI and DSES sores were positive predictors of adherence whereas the BMQ concern subscale score was a negative predictor of adherence.

Finally, a descriptive study by Alsherif and Abd Elrahman (2013) was conducted in Jordan to identify factors leading to relapse in schizophrenia as perceived by patients. Data were collected from psychiatric patients (76; 60 male and16 female) were chosen and agreed to share in this study from El-Fuhais Psychiatric Hospital in Jordan during the year 2011. The

findings showed that most of patients aged between 36-60 years of age. 64.4% of them were not working, and most of them were male patients (78.9). 46% of patients were single patients and 38.1% were married. More than one third of the participants (38.2%) had quite home atmosphere and 27.6 % had social and 17.1% had financial problems. Regarding the factors that affect patient's relapse rate as perceived by patients in relation to their marital status; there was a significant relationship between male and female in relation to vital functions of them ($p<0.054$).

In summary, the previous studies concluded that factors such as socio-demographic data, duration of illness, cost of treatment, family support, treatment schedule, side effects of medication, clarity of medication instruction, patient's knowledge and perception of their dieses, regularity on appointments and follow up, patients-physician relationship, insight and stigma may affect the patient's compliance with their treatment plan. Yet there is a lack of studies in Palestine that assess the compliance rate and factors that may affect medication compliance of Palestinian patients suffering of schizophrenia. Next section will discuss the conceptual framework of the current study.

2.8. Gab of knowledge in previous studies

As discussed previously fourteen primary studies and one MEDLINE search were identified in the current lecturer review. These studies assessed factors affecting compliance that were published between 1995 and 2013. The reviewed studies were heterogeneous in aspects of design, sample size, methods, results and outcomes. The studies employed a variety of research methods and participants.

Four of these studies were descriptive studies (Rettenbacher et al., 2004; Rettenbacher et al., 2004; Tsang et al., 2008; Alsherif and Abd Elrahman; 2013), two were follow-up studies (Löffler et al., 2003; Jung et al., 2011), one was a MEDLINE search (Perkins, 2002), and the study design of the remaining studies was not known (Ruscher et al.,1997; Grunebaum et al., 2001; Baby et al., 2009; Razali and Yahya 1995; Kemp and David 1996; Amr et al., 2013; Dilbaz et al., 2006).

Most of above-mentioned studies did not use a clear definition of the term “compliance”; only one study gave a clear definition of the term (Baby et al., 2009).

Also, the studies used different sample sizes; seven of the studies used a sample size of less than 100 participants (Kemp and David et al., 1996; Grunebaum et al., 2001; Rettenbacher et al., 2004; Rettenbacher et al., 2004; Tsang et al., 2008; Baby et al., 2009; Amr et al., 2013). Four studies used between 100-225 participants (Ruscher et al., 1997; Razali and Yahya; 1995; Dilbaz et al., 2006; Jung et al., 2011; Alsherif and Abd Elrahman; 2013). And only one study used a sample size of more than 300 (Löffler et al. (2003).

Regarding participation selection there was a variation concerning the selction of the target population. For example, eight of the studies selected out-patient participants (Razali and Yahya; 1995; Grunebaum et al., 2001; Loeffler et al., 2003; Rettenbacher et al., 2004; Rettenbacher et al., 2004; Dilbaz et al., 2006; Baby et al., 2009; Amr et al., 2013), three studies selected in-patient participants (Tsang et al., 2008; Jung et al., 2011) and in two studies the participants targeted were not mentioned (Kemp and David et al., 1996; Ruscher et al., 1997).

Furthermore, different methods and tools were used to assess factors affecting compliance. For example, only four studies used semi-structured interviews or scales such as Rating Medication Influences (ROMI), Schedule for the Assessment of Insight (SAI-E), Moriskey Medication Adherence Scale (MMAS) and the Beliefs about Medicines questionnaire (BMQ) (Loeffler et al., 2003; Rettenbacher et al., 2004; Rettenbacher et al., 2004; Amr et al., 2013). The other studies did not mention the methods they used to assess factors affecting compliance (Razali and Yahya, 1995; Kemp and David, 1996; Ruscher et al., 1997; Grunebaum et al., 2001; Tsang et al., Dilbaz et al., 2006; 2008; Baby et al., 2009; Jung et al., 2011; Alsherif and Abd Elrahman, 2013).

Moreover, only six studies out of fourteen reported its findings regarding compliance rate as being between 25% and 58% (Ruscher et al., 1997; Rettenbacher et al., 2004; Rettenbacher et al., 2004; Baby et al., 2009;; Dilbaz et al., 2006; Amr et al., 2013).

In summary, the studies showed inconsistency regarding the term of compliance, factors affecting compliance, rate of compliance, the selection of the participants, the background, the sample size, and the use of different methodology. Due to these discrepancies, generalizing the findings of the studies mentioned above could prove difficult.

2.9. Summary

- This chapter reviewed schizophrenia, its possible etiologies, types of and various treatment methods.

- Previous studies concluded that many factors might affect the patient's compliance with their anti-psychotic medication such as the cost of medication, side effects of medication, stigma, duration of illness, the patient's relationship with the medical staff…etc.

- There is a lack of studies in Palestine assessing factors affecting patient's compliance among patients with schizophrenia.

Chapter Three

Conceptual Framework

3.1. Introduction

The conceptual framework explains the structure of the research and how concepts fit together. It is structured from a set of broad theories and ideas that allow a researcher to identify the problem being examined articulate the questions and review appropriate literature. Most academic researchers use a conceptual framework at the beginning of the research process because it helps the researcher to clarify the research question and goals (Smyth, 2004).

For this study, the conceptual framework helped the researcher to map the research question, the literature review and data analysis. It also allowed the researcher to distinguish and summarize the major independent and dependent variables in the research.

The conceptual framework of the current study was developed as presented in figure (3.1) depending on the literature review of prior researches that tackled the same topic and on the un published thesis (Wridat, 2012). In addition, to the valuable advices and comments from knowledgeable and experts working at the School of Public Health at Al-Quds University in Jerusalem.

For the current study, the conceptual framework consists of two concepts: compliance and the factors that affect compliance as seen in figure (3.1).

Figure (3.1): Factors affecting the compliance of patients with schizophrenia and their anti-psychotic medication.

3.2. Compliance

Compliance can been defined as, “the extent to which a person’s behavior coincides with medical or health advise” (Byrne, 2006). Also, the term “adherence” is often used interchangeably with compliance and is defined as the ability and willingness to abide by a prescribed therapeutic regimen (Inkster, 2006). There are subtle differences between these terms but in clinical practice, they are used interchangeably.

Non-compliance or non-adherence with treatment may occur through a variety of mechanisms that is determined by behavior patterns such as delay in acquiring medical care, avoiding community preventive programs, appointment irregularity, and medication failure and resisting or not maintaining the prescribed therapeutic regimen (Martin et al., 2005).

The main purpose of medical therapy is to attain the desired outcomes. However, if patients are not compliant with healthcare professionals, the objectives may not be achievable. This may cause major difficulties in disease management. Since 1970’s, therapeutic compliance has been a topic of clinical concern, and includes the patient’s compliance with medication as well as diet, exercise and lifestyle changes (Jin et al, 2008).

In an effort to evaluate the impact of therapeutic non-compliance on clinical outcomes, studies have been conducted in the United States, United Kingdom, Australia, Canada and other countries. It was found that the approximate compliance rate of long-term medication therapies was between 40% and 50%. For short-term therapy, the rate of compliance was significantly higher at between 70% and 80%. Compliance with lifestyle changes was the lowest at 20%-30% (DiMatteo, 1995). The rates of non-compliance with varied types of treatment also differ greatly. Estimates of medication non-compliance for unipolar and bipolar disorders range from 10 to 60% (median 40%). In addition, around 50% of patients with schizophrenia do not fully comply with treatment, and non-compliance is linked to relapse, re-hospitalization, poor outcome and high economic costs (Perkins, 2002). Also, one third of patients leaving a general adult psychiatry ward can be expected to be non-compliant within two years (Buchanan, 1992).

It is clear that if the patients do not adhere to the treatment plan, the objectives of a strategic and scientifically based treatment will not be realized. As the aforementioned examples demonstrate, healthcare providers must concern themselves with the problem of therapeutic non-compliance (Buchanan, 1992).

3.2.1. Measurement of compliance

Compliance is hard to quantify and study. Clinicians' ability to identify which patients do not take medication is limited (Sacchetti et al., 2013). Measurement is further complicated because compliance is rarely an all or none phenomenon, but may include errors of omission, mistakes in dosage and timing, and taking medications that are not prescribed (Blackwell, 1979).

There are different methods of measuring medication compliance. Unfortunately, no method can be considered to cover all types of compliance research (Farmer 1999). The selection of the method or the combination of it depends on the goal of the research. The methods for measuring patient compliance can be divided into two categories: direct methods and indirect methods (Farmer, 1999). Each of these types has its advantages and disadvantages as follows:

- **Direct methods**

Direct methods prove directly that the medication has been taken by the patient. Some medical settings observe patients when receiving their medication. The positive aspect of this method is that you can really make sure that that patient is taking his medication (Farmer, 1999).

Never less no method is 100% dependable. A patient can pretend swallowing the medicine but would spit it out directly when he/she is no longer being observed. Additionally when the observing process is made by a caregiver it leads to a higher workload (Farmer, 1999).

Measuring the drug level in biologic fluids is another possible way of measuring the rate of compliance. The presence of the drug in biologic fluids proves that the medication has been taken recently. Still this method is not fully incompliance especially when the drug has a short-life metabolism; it cannot be proven whether the patient has taken his/her

medication during the entire interval. The nonexistence of the drug in a biologic fluid also does not indicate that the patient is non-compliant. In addition, the changes in the patients' metabolism and volume of distribution will directly influence the drug level in biologic fluids, which makes it hard to determine the level of compliance (Farmer, 1999).

- **Indirect methods**

Similarly, indirect methods cannot actually prove that the patient has taken the medication, but they do give an indication of the compliance behavior of the patient (Farmer, 1999). These methods include:

1. **Self-report of medication compliance:** The self-report method is cited by many as the most popular form of assessment. This method consists of the patient reporting on his/her compliance with the prescribed medication regimen, which could be done through a questionnaire or by interviewing the patient in person. An example of a self-reported method is the Morisky Scale (Lichtenberg 2010). This method of measurement assesses the likelihood of medication compliance, simply consisting of four questions. (1) Do you ever forget to take your medicine? (2) Are you careless at times about taking your medication? (3) When you feel better, do you sometimes stop taking your medicine? (4) Sometimes if you feel worse when you take the medicine, do you stop taking it? One of the main disadvantages of the self-reported method is that patients might not be honest about their compliance (Yaffe and Aranda, 2010).

2. Pill count method: This method compares the remaining number of pills to the prescribed dosage that should be taken. To determine the rate of compliance, the unused pills are calculated as a percentage of the total prescribed pills. This method can be very problematic in measuring compliance, as several variables make it unreliable. For example, if the patient is anticipating a pill count, he/she can manipulate the remaining pills to make it appear that he/she complied with the prescribed regimen. Additionally, it cannot be certainty that the patient consumed all of the pills that were taken, as they could also have been disposed of or given away. The pill count method can be effective; if there is more supervision of the prescription period. Also, if the patient is not aware of an upcoming pill count, this can prevent him/her from falsifying the number of remaining medication **(**Redmond and Colton, 2001).

3. Electronic measurement of compliance: Electronic devices that measure and increase medication adherence have been developed. One example of such device is an electronic pill bottle cap or pill box. In these devices, a microchip is embedded in the pill bottle cap, which records the time and date when the container is opened. Some devices may also provide a reminder to the patient to take the prescribed medication, such as through an audio cue or a visual. One drawback to this method is that these devices cannot determine if any medication was actually consumed when the container was opened, and in what dose (Falvo, 2010).

4. Revision of pharmacy records: In this method, pharmacies keep track of what types of medications their customers purchase and the dates and amounts of each refill they request. This method also measures the amount of each drug a patient has taken. One drawback to this method is that it cannot measure the compliance to dosage timing and schedule (Lichtenberg, 2010).

5. Relapse rate: Essentially, relapse means that a patient's symptoms return after some time of relief. For mental illness patients, this usually means that symptoms, which severely disturb normal functioning and social behavior, return. Additionally, it has concluded that patients have a poorer response to treatment after a relapse, as well as a longer period before remission. A relapse could also imply the necessity for a patient to remain on medication on a long-term basis. Because there are differing opinions on defining relapse, some researchers use "re-hospitalization" in place of relapse to connote a broader meaning (Pitschel-Walz et al., 2001). For the purpose of the thesis, the relapse rate was assessed by using four methods including: re-hospitalization, increase in the amount of medication, increase in the number of medication and worsening of symptoms.

3.2.2. The factors that affect compliance

The patient's compliance with his/her treatment is influenced by many factors (Feng, 2009). In the current study these factors were classified into ten components as the follows: socio-demographic variables, duration of illness, patients-physician relationship, regularity on appointments and follow-up, patient's knowledge and perception of the disease, the clarity of treatment's instructions, the treatment schedule, the family support and finally the cost of treatment as shown in figure (3.1).

A: socio-demographic variables

Socio-demographic variables show the classification of a population. These independent variables include factors such as age, gender, place of residence, education level, socioeconomic level, occupation, and marital status. Section one of the questionnaire included seven questions that assessed the socio-demographic variables (questions from 1 to 7) (see appendix C). These variables were studied by (Linden et al., 2001; Loeffler et al., 2003; Aldebot and Mamani, 2009; Acosta et al., 2009).

B: The medical history of the patient

The medical history of a patient is defined as the narrative or record of past events and circumstances that are or may be relevant to a patient's current state of health (Marcinko, 1992). Section two of the questionnaire consisted of 18 questions (questions from 8 to 25) evaluating the effects of the different aspects of the patient medical history on his/her compliance rate (see appendix C). This section included questions such as: when was the patient diagnosed with schizophrenia; when was the first time the patent took his/her medication; the presence of other chronic diseases beside the psychotic disorder; the number of medication the patients is taking for his/her psychotic problem and for other chronic diseases; how many times the patient must take his/her medications; how many times did the doctor change the patient antipsychotic-medication in the last months …etc. Similar questions items were studied on schizophrenia by (Koran et al., 1998; Phelan et al**.,** 2001; Lambert et al., 2003; McCreadie, 2003; Tellis, 2008).

C. Patient's knowledge and perceptions of the disease

The patient's knowledge is defined as the amount of facts and correct information that the patients have about the disease whereas the perception is how patients evaluate their disease. The Patient's knowledge and perception about their disease and treatment is typically insufficient, some patients underestimate the importance of their treatment interventions while others are poorly informed about the disease and the negative outcomes of non-compliance (Alm-Roijer et al., 2004; Gascon et al., 2004).

Schizophrenia medications have undesirable side effects for the patients. Compliance with antipsychotic medication was strongly associated with side effects (Karow A et al., 2007). These effects are often a reason that many patients either refuse to take their medication

dosages properly, or stop taking medication entirely. The most common side effects that influence compliance sedation, are dry mouth, weight gain, sexual problems, stomach problems, frequent urinate and appetite changes (Weiden et al., 1986). Section three of the questionnaire included one question (question 37) assessing the side effects of the psychotic medication and its correlation with compliance (see appendix C).

The stigma of a mental disorder plays a powerful barrier to treatment, not only because of fear of being labeled as mentally ill, but also because too often mental health professionals and mental health services as whole hold often in a subtle way, negative or rejecting attitudes towards users and perpetuate practice fostering segregation, dependency and powerlessness (Deegan, 1990). Stigma's association to non-adherence to treatment is common but unfortunately difficult to detect in patients with schizoaffective disorder and schizophrenia, of whom almost half take less than 70% of prescribed doses (Goff et al., 2010). A study by Fung et al. (2008) has found that self-stigma is one of the contributing factors in undermining treatment adherence. Individuals with schizophrenia often endorse a feeling of self-disregard and incompetence which affects their motivation for seeking therapy.

Section three of the questionnaire included 16 questions (questions from 26 to 41) assessing patient's knowledge and perceptions of their disease, in addition to side effects and stigma (see appendix C).

D. Duration of illness

It means how long the patient has been suffering from a particular disease as this was studied by many previous studies such as (Lacro et al., 2002; Velligan et al., Gascon et al., 2004; 2009; Novick et al., 2010). The duration of illness was explored in section four (questions from 42 to 43) by highlighting the impact of the long duration of schizophrenia on the patient's desire to take medication regularly and continuously and its relationship with compliance (see appendix C).

It was found that patients with acute illnesses have higher compliance rates than patients with chronic illnesses (Gascon et al., 2004). In addition, the duration of the disease affects compliance, with longer durations negatively affecting patient compliance rates (Lacro et al., 2002; Velligan et al., 2009; Novick et al., 2010).

E. The treatment schedule

The treatment schedule is defined as the schedule according to which treatment is administered in trial (dose and dose schedule) (Meinert, 2013). Section four of the questionnaire consisted of four questions (questions from 44 to 47) highlighting the impact of the treatment schedule on the patient's commitment in taking his/her medication (see appendix C). Concerning this issue, patients were asked questions such as: the prescribed dosage frequency, the patient's ability to remember the prescribed medication regimen, how other chronic diseases and their medication might have affected the patient's compliance, the frequent change in the treatment plan and its relation with the desire in taking the prescribed medication. Result of previous studies showed a significant correlation between the treatment schedule and the level of compliance (Bloom, 2001; Pareek and Kalia, 2013).

F. The patient-doctor relationship

The doctor-patient relationship forms a key component of compliance and a key to greater patient involvement in decision making (Martin et al., 2005). This section of the questionnaire includes 13 questions concerning the nature of the relationship between the patient and his/her doctor; such as the way the doctor acts towards the patient, the duration of the patient's appointments with his/her doctor, whether the patient was seen by the same or different doctors in every visit, and the attitude of the medical staff in the attended clinics towards the patient. Studies have shown that better rates of compliance could be achieved, when doctors are emotionally supportive, giving reassurance or respect, and treating patients as an equal partner (Moore et al., 2004; Lawson et al., 2005). Section five consisted of 13 questions (questions from 48 to 60) assessing the impact of the patient-physician relation on the level of compliance (see appendix C).

G. Clarity of treatment instructions

Section seven of the questionnaire included seven questions (questions from 61 to 67) about how well the patient understood the doctor's instructions for treatment, the clarity and simplicity of the doctor's language, the clarity and simplicity of the explanations that were given by the medical staff and the simplicity of the language that the medical staff in general were using. In addition, they were asked if they had ever received explanation about the medical tests they performed and if they were given advice and information

about different ways to avoid relapse and to controlling their psychological symptoms (see appendix C). Torrey (2009) reported that the clarity and simplicity of the medical instructions given to patients had a significant effect on their compliance rate.

H. Family support

One of the major factors influencing compliance is family and social support. Patients who are surrounded by family members and/or friends to help or administer medications are associated with higher rates of compliance (Abu Rahma, 2012). Draine and Solomon (1994) reported that better social functioning and wide-ranging social networks were correlated with better commitment to their medications. On the other hand, ineffective or stressful social interactions have a negative impact on levels of compliance.

In addition, Smith et al. (1997) found that educating both patients and their family members to recognize symptoms, drug effects and side effects has the possibility to enhance compliance. An assessment of the help and support of family members for the patient, including financial support, help with taking his/her drugs, emotional support, help with transportation, encouragement, and how present family members have been during medical visits and treatments were utilized to assess family support (questions from 68 to 73) (see appendix C).

I. Patient's regularity on appointment and follow up

It’s about how committed the patient has been to keeping scheduled times of appointments, and if the patient follow the advice of the doctor (Bovet et al., 2002). Section nine of the questionnaire included eight questions (question from 74 to 82) about the patent's regularity on medical appointments (see appendix C).

J. Cost of treatment

Cost of treatment is defined as the amount of money the patients has to pay to cover his or her medical costs. The financial cost of treatment is a critical matter that should be taken into consideration in the patient’s compliance, particularly for patients with chronic disease and a long-term treatment process (Ellis et al., 2004; Ponnusankar et al., 2004). Clients who are responsible for the cost of all or part of treatment may cease taking their medication because they are unable to afford them. In addition, some of them simply are unwilling to spend their money on treatment programs. There was an increased likelihood

that patients who had no health insurance or who had low income were non-compliant to treatment (Berghofer et al 2002; Baby et al., 2009; Velligan et al., 2009).

In section ten the participants of the study were asked to answer six questions (questions from 83 to 88) concerning the issue of cost of treatment (see appendix C).

3.3 Summary

- This chapter presented the conceptual framework of the study, which was taken from different studies.
- The definition and the measurement of compliance were highlighted.
- The factors that affect compliance were ten variables, which included: socio-demographic data, duration of illness, cost of treatment, family support, treatment schedule, clarity instructions of treatment, patient's knowledge and perception of disease, regularity on appointment and follow up, patients physician relationship and medical history of the patient.

Chapter four

Methodology

4.1. Introduction

There is a lack of studies that assess the factors affecting the compliance of patients with schizophrenia with their anti-psychotic medication in Palestine. This chapter describes the methodological process of the current study, such as the study design, the target population, sampling approach, data collection, data analysis and the ethical consideration.

4.2. The study design

As mentioned previously, the main aim of the study is to assess the compliance rate and to identify the factors influencing the compliance of patients with schizophrenia with their anti-psychotic medication in Hebron area. For the purpose of this study, cross sectional study was utilized. It is a descriptive study in which the disease and the exposure status are measured simultaneously in a given population. Cross-sectional studies, also called prevalence studies or naturalistic sampling, have the objective of determination of prevalence of risk factors and prevalence of disease at a short point in time in the study population. Disease and exposure are ascertained simultaneously, relatively inexpensive and takes up little time to conduct and there is no loss to follow-up (Monsen and Van Horn, 2008; Adler and Clark, 2014). On the other hand, they do not offer evidence of temporal relationship between risk factors and disease, are subject to bias and are not good for hypothesis testing (Elsevier Health Sciences, 2007).

4.3. The study target population

The target population of the study was patients with schizophrenia (males and females) aged 18 years and over and who attended Hebron Community Mental Health Center for Adults (Beit-Kahel).

4.4. Inclusion criteria

- Patients who had been diagnosed with schizophrenia for more than six months because the patients need time to adjust to their treatment plan and their disease.
- Patients who were mentally stable (no hallucination and delusion)
- Schizophrenic patients aged 18 years old and over
- Patients who attended Hebron Community Mental Health Center for Adults (Beit-Kahel)

4.5. Exclusion criteria

- Patients who were in the acute stage and suffered from hallucination and delusions or severe depression.
- Patients who had schizophrenia in addition to other cognitive disorders such as dementia, or learning disabilities because they will face difficulties in understanding the questions of the questionnaire.
- Newly diagnosed patients with schizophrenia for less than six months because such patients usually do not have a stable treatment plan.

4.6. The setting

The study was conducted at Hebron Community Mental Health Center for Adults (Beit-Kahel). The center was established in its current location 2004 with the support of United Nations Development Programme (UNDP) and the World Health Organization (WHO). Beit-Khael center is a governmental center operating under the Palestinian Ministry of Health; it is also considered to be a primary mental health care center. This setting was selected because it is the only outpatient center in Hebron area, which provides outpatient treatment for mentally ill patients. The center provides numerous medical services such as mental health care, psychological tests, and pharmacy services. There are about 4300 files of mentally ill patients suffering from various mental disorders such as schizophrenia, depression, epilepsy, mental retardation who attend the center for mental health care services.

4.7. Sample size

The total population of patients suffering from schizophrenia in Palestine is unknown. Due to this fact, the size of the study total population could not be determined. Therefore, the sample size was calculated using the world's prevalence rate of schizophrenia, which is one percent. According to the last Palestinian Central Bureau of Statistics' population survey 2007, the population size of Hebron Governorate was 5,438.91. Applying the world prevalence rate of schizophrenia the number of the study total population was 5.439 patients. The study sample size was calculated using computer software (PEPI-for-Window) and the following formula was used to determine the sample size, which was: 359 patients.

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2} = \frac{(1.96)^2 * (0.5) * (1-0.5)}{(0.05)^2} = 384.16$$

Description:

ss = required sample size
Z = confidence level at 95% (standard value of 1.96)
p = percentage picking a choice, expressed as decimal (here 0.05)
c = margin of error at 5% (standard value of 0.05)

Them the correction for finite population:

$$\text{New ss} = \frac{ss}{1+ (ss-1/pop)} = \frac{384.16}{1+ (384.16-1/5.439)} = 359.02$$

Where: pop = population (5,439)
The total number of patients who were willing to participate in the questionnaire was 300. The actual number as mentioned in the above equation of 359 patients could not be achieved because the same patients continued to come repeatedly every three months to the center.

4.8. The sampling approach

Non-probability sampling is a sampling technique where the samples are gathered in a process that does not give all the individuals in the population equal chances of being selected. For the purpose of this study, the non-probability type which is the convenience sampling was utilized to select the participants of the study. A convenience sample is a sample selected in a deliberative and non-random fashion to achieve a certain goal (Adler and Clark, 2014). Also, convenience sampling is a technique where subjects are selected because of their convenient accessibility and proximity to the researcher. It has the advantage of relatively easy sample selection and data collection, it is also affordable and less time consuming while it's subjected to bias of personal selection (Polit and Hungler, 1999). Hebron Community Mental Health Center for Adults (Beit-Kahel) was selected because it is the main provider of outpatient's services for patients with schizophrenia in Hebron.

4.9. Instrument of the current study

The data collection process was achieved by the use of a self-reported questionnaire and by the use of the patients' files. The questionnaire was taken from unpublished thesis (Wridat, 2012), which based upon six previous studies.

The questionnaire was modified to cover schizophrenia related knowledge. To ensure the clarity and efficacy of the questionnaire, it was reviewed by five Ph.D. holder experts in public health, mental health and counseling from Al Quds University.

Also, in order to evaluate the efficiency, language and relevance of the questionnaire, a focus group comprising of 10 patients was carried out at the Mental Hospital in Bethlehem. Following the result of this assessment, slight changes were made.

The final questionnaire consisted of ten sections as shown in table (4.1) Section one and two were comprised entirely of multiple choice questions, while section three to ten were on a five-point Likert Scale (1. always, 2. often, 3. sometimes, 4. rarely, 5. never) (see appendix C).

Table (4.1) Components of the questionnaire of the current study

No.	Sections of the questionnaire	Number of questions of each section
1	Socio-demographic data	7 questions
2	Medical history	18 questions
3	Knowledge and perception of schizophrenia, stigma, side effects	16 questions
4	Duration of illness	2 questions
5	Treatment regimen	4 questions
6	Patients' relationship with the medical staff	13 questions
7	Clarity of drugs-usage instructions	7 questions
8	Family Support	6 questions
9	Regularity on doctor's appointments and treatment plan	8 questions
10	Costs of treatment	6 questions
Total		**87 questions**

4.10. Validity and reliability of the instrument

Reliability refers to the extent to which a measuring instrument contains variable errors. That is errors that appear inconsistently from observation to observation during any one measurement attempt or that vary each time a given unit is measured by the same instrument (Abramson, 1990). The reliability of the instrument was tested by using Cronbach's Alpha coefficient which was 87%. The reliability of data was guaranteed by training the assistant interviewer to maintain consistency in the admissive process of the questionnaire.

Content validity is the extent to which a measuring instrument covers a representative sample of the domain of behaviors to be measured. To determine whether a test has content validity, an expert in the area being tested should be consulted (Jakson, 2008). The content validity of the current study instrument was done by a conduction a focus group 10 patients with schizophrenia from the out patients clinics at the mental hospital in Bethlehem in order to assess the language and content of the questionnaire. In addition, five experts from Al-Quds University assessed the validity of the questionnaire. Slight changes have been done in the language for some questions in the questionnaire.

In an attempt to guarantee external validity, a large sample size of 300 participants was taken.

4.11. Data collection

To explain the purpose of study, a formal letter to the Palestinian Ministry of Health was sent and approval was obtained in January 2012. Two methods were used to collect data:

First, as mentioned previously, a questionnaire assessing ten factors influencing the compliance of the patients with schizophrenia with their antipsychotic medication was developed. The questionnaire was developed based on previous studies.

Second, in order to assess patient's compliance with his/her psychotic medication, information was obtained from each patient's medical file. Doctors' notes were accessed regarding hospitalizations, increase in the number of medications given, increase in the dose of medication, and worsening of symptoms during the past three months from the date the questionnaire was filled in. The three months period was chosen because of time limitation to accomplish the study. Also, the patient visited their doctor every three months, so any deterioration will be recorded by their doctors in their medical files.

The main researcher trained one research assistant who has a BA in nursing to obtain data from the medical files for all the participants and to help the main researcher in filling in the questionnaire. In order to maintain validity and reliability of data, the purpose of the study, the items of the questionnaire; the inclusion and exclusion criteria of the study, in addition to the ethical consideration were explained to him. Further, the assistant researcher observed several times the main researcher while interviewing the patients in order to maintain consistency in obtaining data from the patients.

After that the researcher and the research assistant began interviewing the participants to fill in their questionnaire in the center. The data collection process took place from 8 am until 3 pm during the work days of Hebron Community Mental Health Center for Adults (Beit-Kahel) from 28th April to 23rd November 2012. The medical team of the center helped the researchers in selecting the patients, who were considered to be mentally stable to participate in the study according to the inclusion criteria. This played a major role in obtaining a high response rate and facilitated the ease of the questionnaire completion.

4.12. Data analysis

The data was analyzed by using the Statistical Package for Social Science (SPSS), version 20.0. Characteristics of the sample were obtained through descriptive study analysis (frequency and percentages). Relationships between selected variables were analyzed by using of chi-squared, Fisher exact test and logistic regression.

4.13. Ethical consideration

To ensure an ethical consideration of the study, a number of measures were taken. Firstly, a proposal of the study was submitted and approved by the research committee of the School of Public Health at Al-Quds University.

Second, the School of Public Health sent to the Palestinian Ministry of Health a formal letter. The letter proposed the outline of the study in order to obtain permission for access to patients at the Hebron Community Mental Health Center for Adults (Beit-Kahel). A permission to conduct the study was received on 11.03.2012.

Furthermore, in cooperation with the gatekeepers, the participants of the study were given the questionnaire along with a cover letter explained the study's objectives and its importance. The cover letter contained the participants' rights to refuse or to accept the participation or even withdraw during the interview without any adverse impact on the care they received. Also, before filling in the questionnaire, a verbal approval was taken from each participant. Additionally, the letter stated that the patient name would remain anonymous, and all data would remain confidential and solely for research purposes. No identifiers would be used in the questionnaire to maintain the secrecy of the individuals such as names or codes.

Finally, all data were saved on a password-protected computer and a hard-drive. Access permission was reserved for the researcher and the study supervisor.

4.14. Summary

- For the purpose of the study a cross-sectional design was utilized. This design was used because it is less time consuming and it is affordable.

- The 300 patients who participated in the study were recruited from the out- patient center between April 28th, and November 23rd. at Hebron Community Mental Health Center for Adults (Beit-Kahel).

- The data collection procedure was achieved through the use of a self-reported questionnaire, which consisted of ten sections. The sections contain questions both about socio-demographic data and also questions related to the different factors affecting compliance. Further, data was obtained from the patient's file including re-hospitalization, Increase in the number of medication, increase in the dose of medication and worsening of symptoms to assess the relapse rate.

- The validity of the questionnaire was guaranteed by five experts from the School of Public Health and from the psychological department in al Quds University. The reliability of the instrument was tested by using Cronbach's Alpha coefficient and it was 87%.

- Data analysis was done by using the Statistical Package for Social Sciences (SPSS) version 20.

- To ensure the ethical consideration of the study a number of measures were taken such as an approval was obtained from the Palestinian Ministry of Health, a constant of participation was distributed on the patients.

Chapter Five

Results

5.1. Introduction

As mentioned in previous chapter, in order to achieve the main aim of the current study, a cross-sectional study was utilized and a total of 300 questionnaires were filled in by two researchers in Hebron Community Mental Health Center for Adults (Beit-Kahel) in the year 2012.

This chapter presents the findings of the current study as the following:

1. The characteristics of the study participants
2. The compliance rate
3. Participants' responses to the questions related to the factors that may affect compliance.

5.2. Characteristics of the study participants

The sample consisted of 300 patients, 67% (n=201) of them were males and 33% (n=99) were females (see figure 5.1).

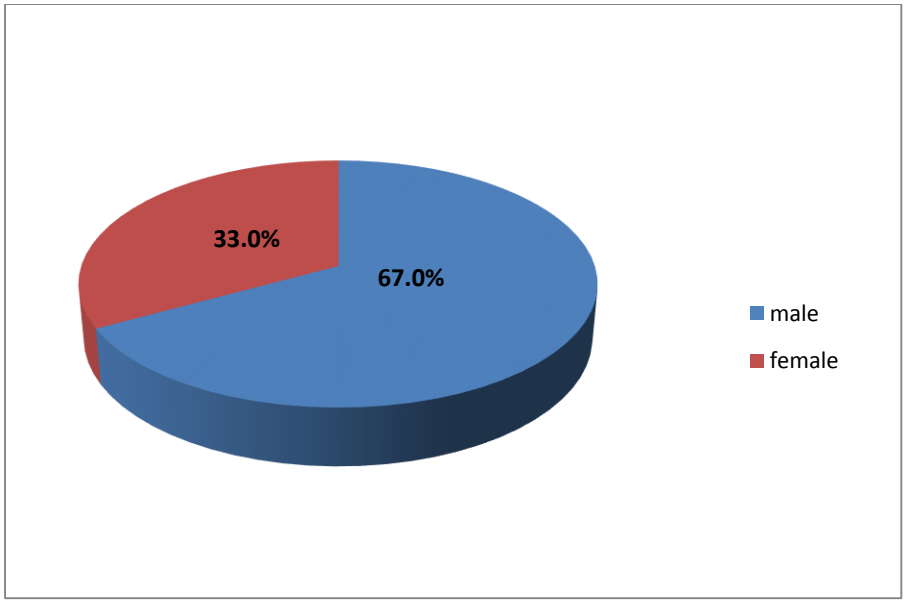


Figure (5.1): The distribution of the participants by gender.

The participants' ages ranged from 18 to 76 years of which 17.7% (n=53) aged from 15 to 30 years, 41.7% (n=125) aged from 31 to 45 years, 33.0% (n=99) aged from 46 to 60 years, and 7.7% (n=23) were over the age of sixty years (see figure 5.2).

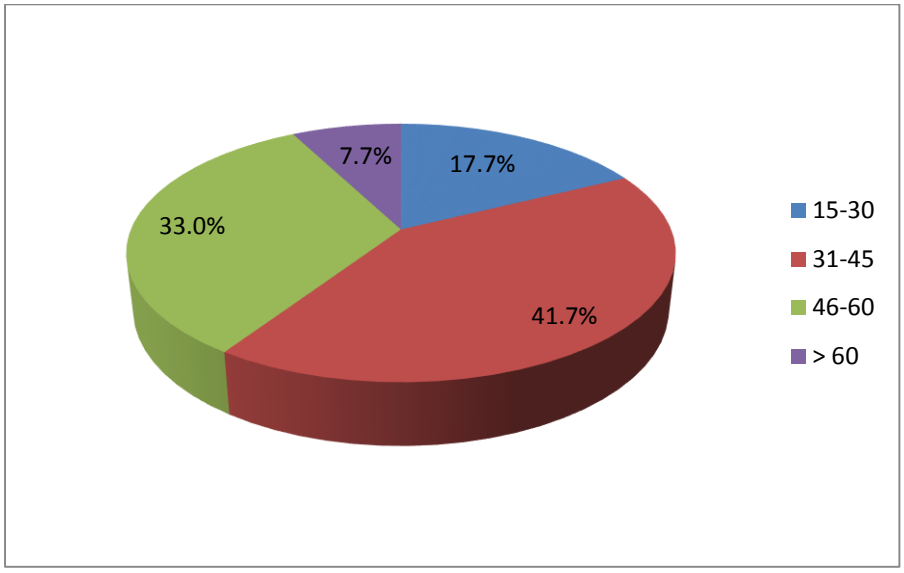


Figure (5.2): The distribution of the participants by their age group.

Regarding the participants' place of residence, 56.7% (n=170) of the respondents were from villages, 43% (n=129) were from the city, and one of them was from a refugee camp (see figure 5.3).

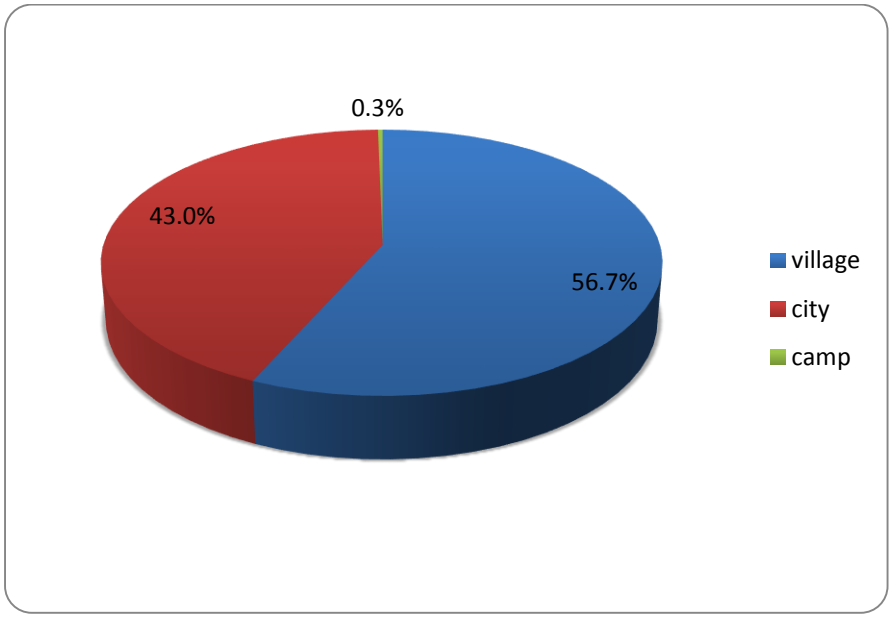


Figure (5.3): The distribution of the participants according to their place of residency.

For the marital status, the majority of the participants (59.7%, n=179) were married, 26.0% (n=78) were single, 11% (n=33) were divorced, and 3.3% (n=10) were widowed (see figure 5.4).

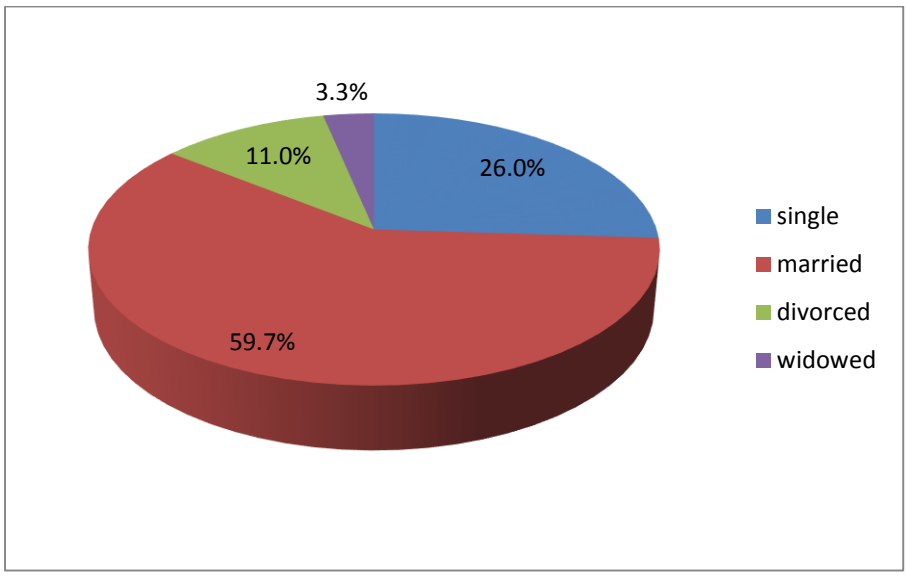


Figure (5.4): The distribution of the participants by their marital status.

Also, the educational level varied among the participants as 32.3% (n=97) of them had a secondary degree, 27.7% (n=83) received elementary education (seven to nine years of education), 26.3% (n=79) had primary education that is one to six years of school education, 12% (n=36) had a college or university degree, and 1.7% (n=5) received no education (see figure 5.5).

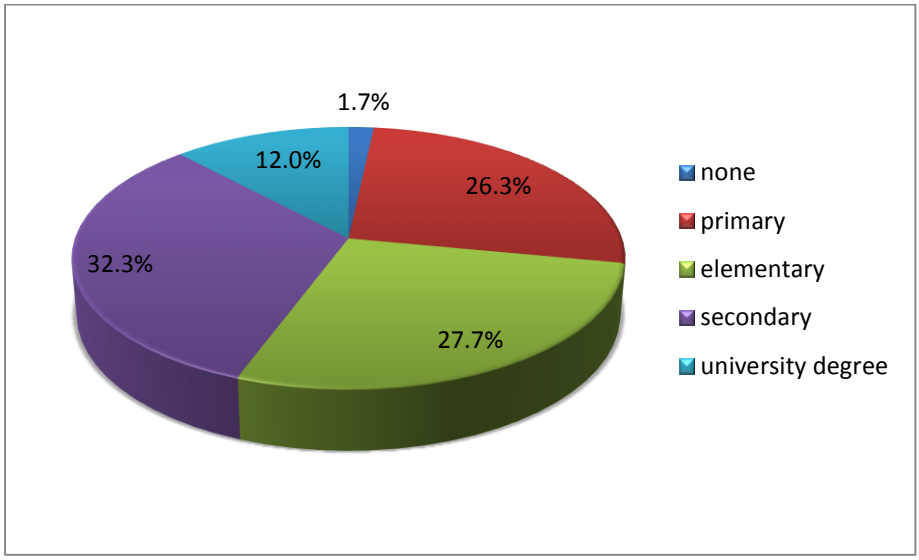


Figure (5.5): The distribution of the participants by their level of education.

Regarding the participants' work status, the vast majority (74.7%, n=224) were unemployed, 2.7% (n=8) were employed, 1% (n=3) were retired, and 21.7% (n=65) were other than these classifications such as temporary workers (see figure 5.6).

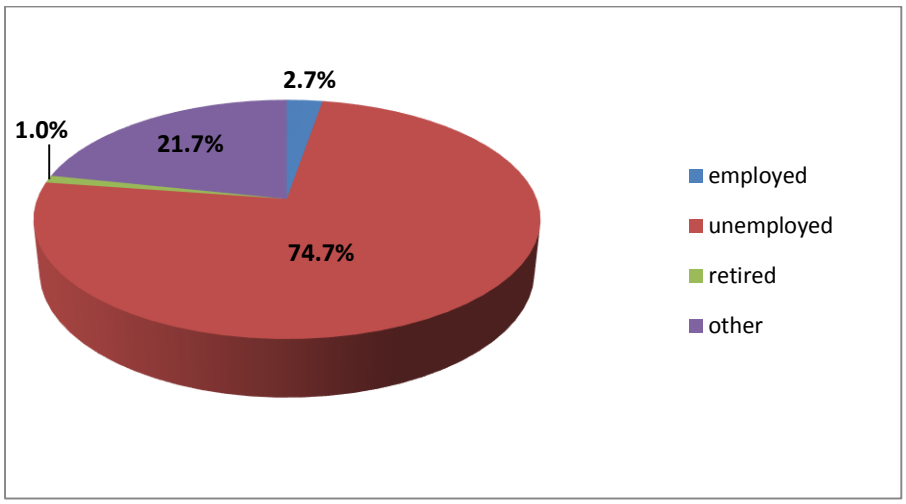


Figure (5.6): The distribution of the participants by their work status.

When the participants were asked about their monthly income, they responded as the following: 86% (n=258) earned one thousand NIS or less, 8.7% (n=26) earned between 1001 to 2000 NIS, 4.7% (n=14) earned between 2001-3000 NIS, and 0.7% (n=2) earned more than three thousand NIS (see figure 5.7).

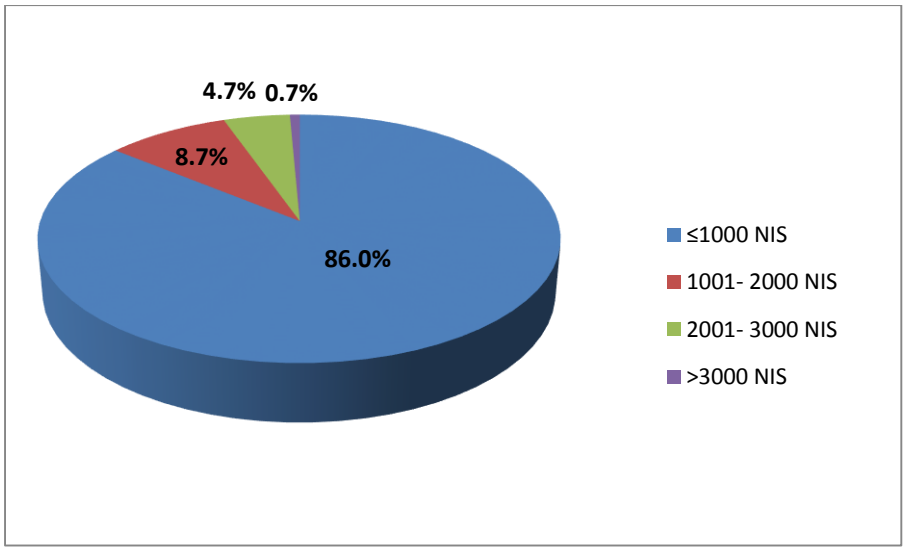


Figure (5.7): The distribution of the participants by their monthly income.

5.3. The compliance rate

Compliance was estimated by using the relapse rate. The relapse rate was assessed by using re-hospitalization, increase in the number of medication, increase in the dose of medication and significant worsening of symptoms. Data for the four methods were collected from the patients' files in the past three months from the date the questionnaire was filled in, which took place from 1st. January 2012 until 1st. December 2012.

Each method is explained as the following:

1. Re-hospitalization

The patient's file was checked if the participant had any re-hospitalizations in the past there months from the date the questionnaire was filled in. The findings showed that the vast majority of the participants (95.3%, n=286) had no hospital admissions while 4.2% (n=13) had only one hospital admissions and only 0.3 (n=1) entered the hospital twice (see table 5.1).

Table (5.1): Frequency and percentage of the participants to the question related to number of hospital visits.

Variable		none	Once	twice	total
Number of hospital admissions	No.	286	13	1	300
	%	95.3	4.2	0.3	100

2. Increase in the number of medication

The Number of medication was assessed by checking the patient's file, to see if the doctor had prescribed any new psychotic drugs such Largactil or Seroqel in addition to the current medications in the past three months from the date the questionnaire was filled in.

It was found that 89.0% (n=267) of the participants had no increase in the number of medications while only 11.0% (n=33) had an increase in the number of medications in the past three months (see table 5.2).

Table (5.2): Frequency and percentage of participants who had increase in the number of the psychotic medications.

Variable		Yes	No	Total
Increase in the number of psychotic medications.	**No.**	33	267	300
	%	11.0	89.0	100

Also data was extracted according to the last five visits to mental health clinic in the past three months, and findings showed that 3.7% (n=11) of the participants had increase in the number of medication in the first visit, 7.2% (n=19) in the second visit, 9.3% (n=11) in the third visit and 2% (n=1) in the fourth visit, and there was no increase in the number of medications in the fifth visit as shown in table (5.3).

Table (5.3): Frequency and percentage of the participants who had increase in the number of medications for each visit.

Variable		Yes	No	Total	
				F	**%**
Increase in the number of medications in the first visit.	**No.**	11	289	300	100
	%	3.7	96.3		
Increase in the number of medications in second visit.	**No.**	19	242	261	87
	%	7.2	92.8		
Increase in the number of medications in the third visit.	**No.**	11	107	118	39.3
	%	9.3	90.7		
Increase in the number of medications in the fourth visit.	**No.**	1	49	50	16.7
	%	2	98		
Increase in the number of medications in the fifth visit.	**No.**	0	5	5	1.7
	%	0.00	100		

3. Increase in the dose of medication

Checking of patient's file was done to assess the increase in the dose of medication in the past three months from the date the questionnaire was filled in.

It was found that, the vast majority of the participants (93.3%, n=280) had no increase in the dose of medications and only 6.7% (n=20) had an increase in the dose of their medications during the past there months from the date the questionnaire was filled in (see table 5.4).

Table (5.4): Frequency and percentage of the participants who had increase in the amount of medications.

Variable		Yes	no	Total
Increase in the amount of medications	**No.**	20	280	300
	%	6.7	93.3	100

Also, according to the prescription of the doctor in the patient's file, it was found that 98.3% (n=295) of the participants had no increase in the dose of medications in the first visit, 93.5% (n=244) in the second visit, 98.3% (n=116) in the third visit, 94% (n=47), and 80% (n=4) in the fifth visit (see table 5.5).

Table (5.5): Frequency and percentage of the participants who had increase in the amount of medications for each visit.

Variable		Yes	No	Total	
				F	%
The doctor increased amount of medications in the first visit.	**No.**	5	295	300	100
	%	1.7	98.3		
The doctor increased amount of medications in the second visit.	**No.**	17	244	261	87
	%	6.5	93.5		
The doctor increased amount of medications in the third visit.	**No.**	2	116	118	39.3
	%	1.7	98.3		
The doctor increased amount of medications in the fourth visit.	**No.**	3	47	50	16.7
	%	6	94		
The doctor increased amount of medications in the fifth visit.	**No.**	1	4	5	1.7
	%	20	80		

4. Worsening of symptoms

Also, relapse was identified retrospectively in this study as the re-emergence or aggravation of psychotic symptoms during the past three months from the date the questionnaire was filled in. Also, worsening of symptoms was assessed in the last five visits to the mental health centre in the past three months as mentioned in page 45. According to the doctor notes in the patient's file, only 3.0% (n=9) of the participants had a worsening of the symptoms such as hallucination, delusions, disorganized speech and disorganized behavior while 97% (n=291) had no worsening of the symptoms in their first visit, 3% (n=9) had a worsening of the symptoms while 97% (n=253) had no worsening of the symptoms in the second visit, whereas only 2.5% (n=3) had worsening of the symptoms and 97.5 (n=115) had no worsening of the symptoms in the third visit (see table 5.6).

Table (5.6): Frequency and percentage of the participants who had worsening of the symptoms.

Variable		Yes	No	Total	
				F	%
Worsening of symptoms in the first visit	**No.**	9	291	300	100
	%	3	97		
Worsening of symptoms in the second visit.	**No.**	8	253	261	87
	%	3	97		
Worsening of symptoms in the third visit.	**No.**	3	115	118	39.3
	%	2.5	97.5		
Worsening of symptoms in the fourth visit.	**No.**	0	50	50	16.7
	%	0.0	100		
Worsening of symptoms in the fifth visit.	**No.**	1	4	5	1.7
	%	20	80		

5.4. Participants' responses to the factors that affect compliance

The study also tried to assess the factors that may affect patient's compliance. These factors included medical history, knowledge and perception of mental problems, duration of illness, drugs' regimen, the participants' relationship with their physician, clarity of drugs usage instruction, family support, regularity on appointments, treatment plan and the cost of treatment. The findings for each variable are discussed in more details below.

5.4.1. Factor one: participants' medical history related questions:

This section included 18 questions related to participants' health in general and to their medication. As shown in figure (5.8), the vast majority of the participants (88%, n=264) said that they had a mental health problem and 12% (n=36) said that they did not have a mental health problem (see figure 5.8).

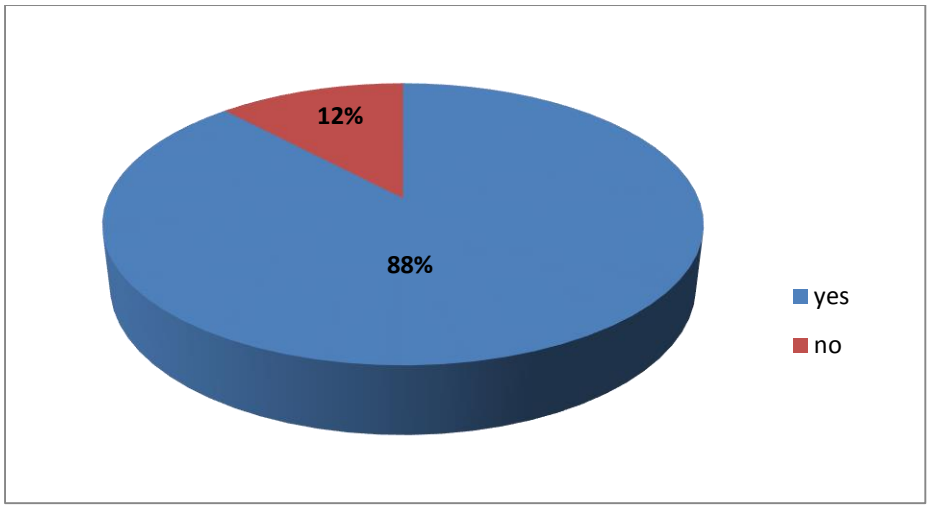


Figure (5.8): The distribution of the participants by the perception of having a mental problem.

Further, the participants' ages when they were diagnosed with a mental problem ranged from 12 to 62 years. For example, 26.2% (n=78) of the participants aged from more than 10 years to less than or equal to 20 years when they were diagnosed, 53% (n=158) aged more than 20 years to less than or equal to 30 years, 17.1% (n=51) aged more than 30 years to less than or equal to 40 years, 3% (n=9) aged more than 40 years to less than or equal to 50 years, and 0.7% (n=2) were over the age of fifty years old (see figure 5.9).

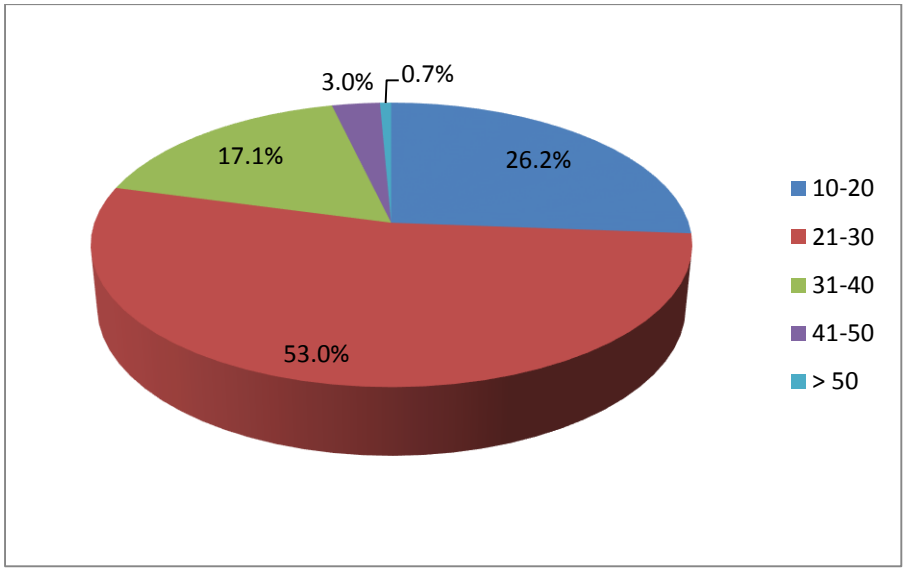


Figure (5.9): The distribution of the participants by their age when they were first diagnosed with their mental problem.

In addition, the participants' ages when they had prescribed medications for their mental problem for the first time ranged from 12 to 62 years. For example, 24.9% (n=74) at them aged more than 10 years to less than or equal to 20 years, 52.9% (n=157) aged more than 20 years to less than or equal to 30 years, 18.2% (n=54) aged more than 30 years to less

than or equal to 40 years, 3.4% (n=10) aged more than 40 years to less than or equal to 50 years, and 0.7% (n=2) were over the age of fifty years old (see figure 5.10).

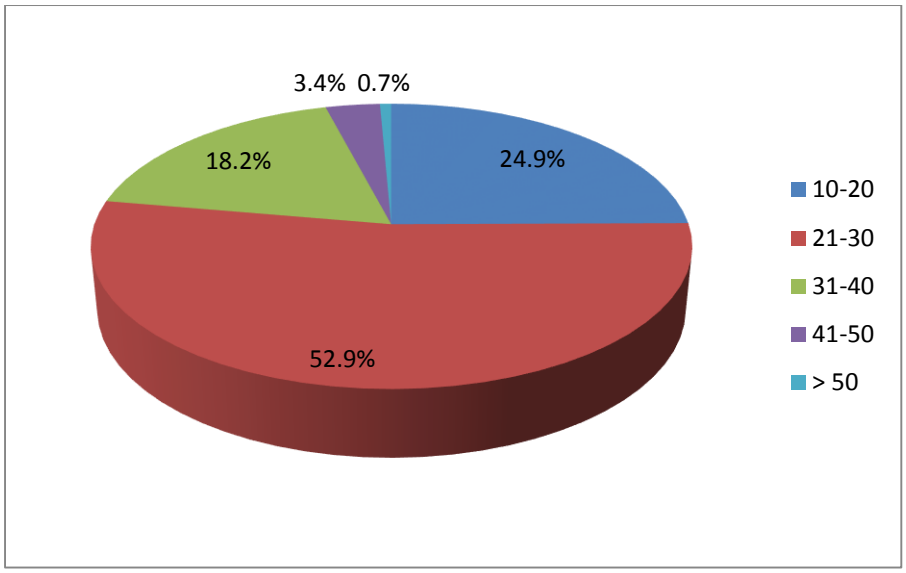


Figure (5.10): The distribution of the participants by their age when they had prescribed medications for their mental problem for the first time.

Also, the vast majority of the participants (85.7%, n=257) didn't suffer from any physical diseases and only 14.3% (n=43) suffered from physical diseases.

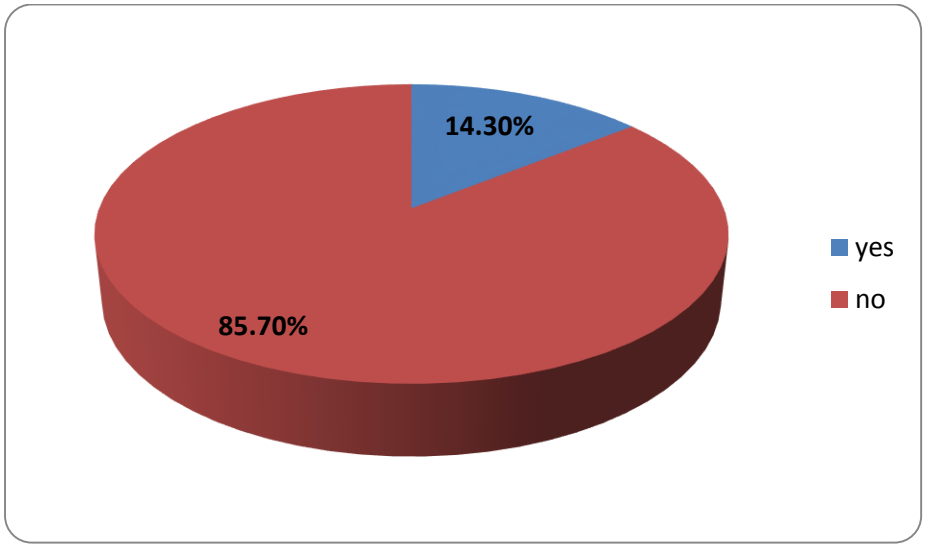


Figure (5.11): The distribution of the participants by the existence of any other psychical diseases.

From those, (n=43) who suffered from physical diseases, 32.5% (n=14) of them had diabetes, 16.2% (n=7) had heart disease, 4.6% (n=2) had arthritis, 4.6% (n=2) had asthma or pneumonia, 7% (n=3) had kidney failure, 7% (n=3) had glands disease, 2.3% (n=1) had hypertension, 2.4 % (n=1) had stomach problems, and 2.4% (n=1) had cancer. Also 18.7%

(n=8) of patients suffered from more than one disease and 2.3% (n=1) suffered more than three diseases (see figure 5.12).

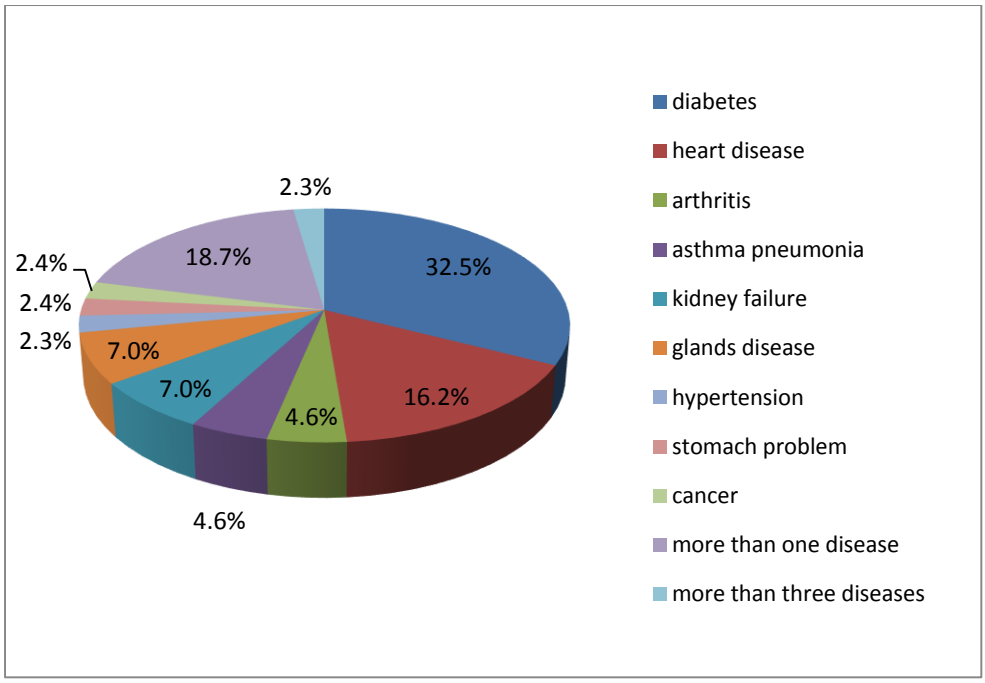


Figure (5.12): The distribution of the participants by having physical diseases.

Also, out of the 43 participants 88.7% (n=38) took drugs for their physical diseases in addition to their psychotic disorder and 11.3% (n=5) did not take any medication for their physical diseases (see figure 5.13).

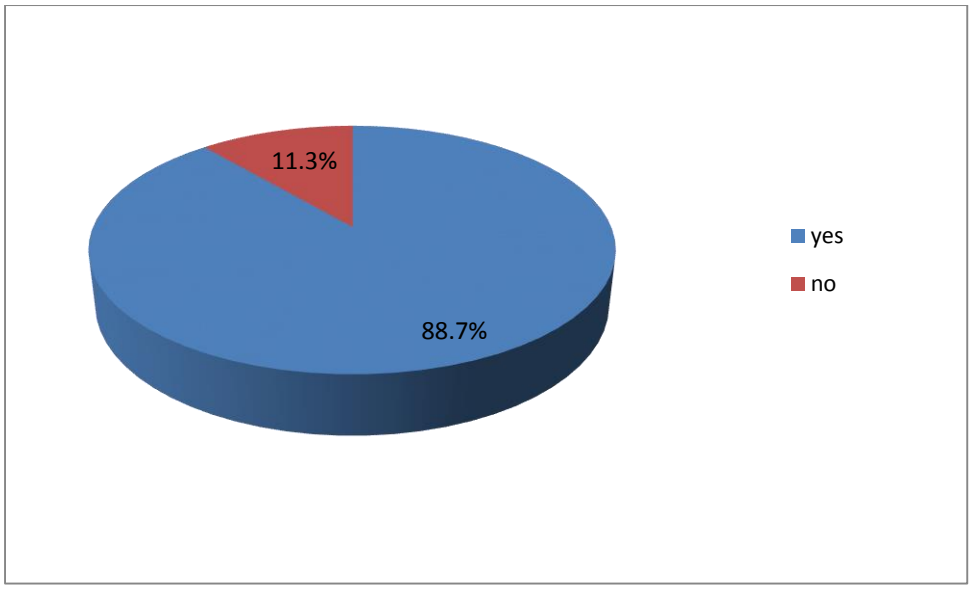


Figure (5.13): The distribution of the participants who took drugs for their physical diseases.

Also, those who took drugs for their physical diseases, 50% (n=19) took two drugs, 31.6% (n=12) took three drugs or more, and 18.4% (n=7) took one drug.

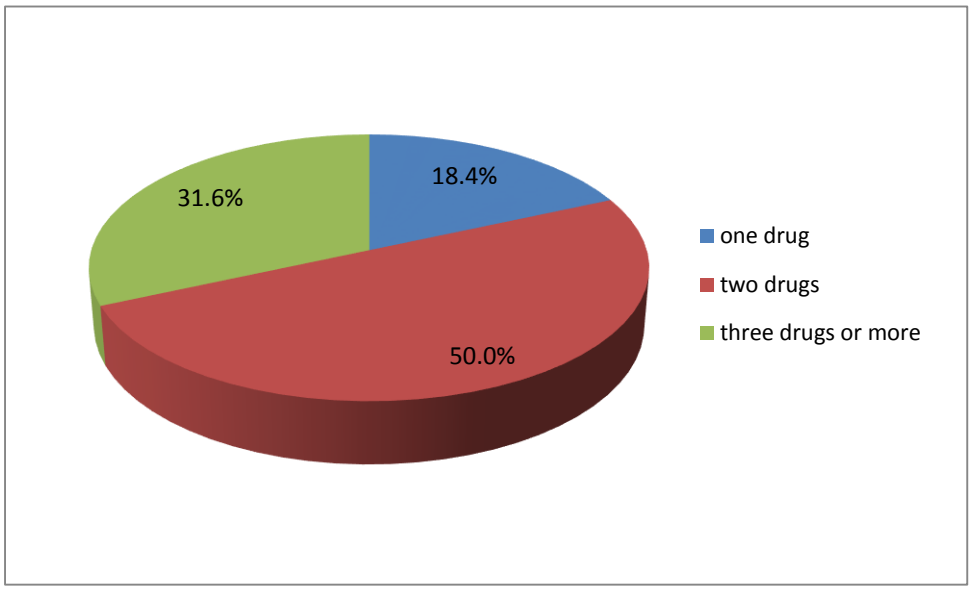


Figure (5.14): The distribution of the participants by the number of drugs they took for their physical diseases.

When the participants were asked about the number of drugs they took for their mental problems, 53.3% (n=160) reported that they took three drugs or more, 34% (n=102) took two drugs, and 12.7% (n=38) took one drug (see figure 5.15).

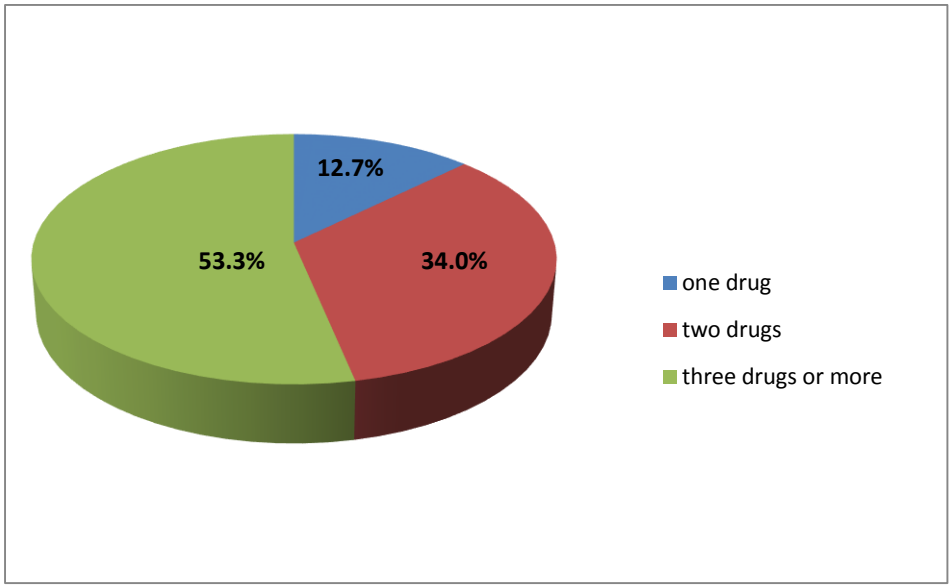


Figure (5.15): The distribution of the participants by the number of drugs they took for their mental problem.

Furthermore, the vast majority of the participants (99.7%, n=299) indicated that they took their drugs from primary mental health centers such as Hebron Community Mental Health Center for Adults (Beit-Kahel) and 0.3% (n=1) bought it from private pharmacies (see figure 5.16).

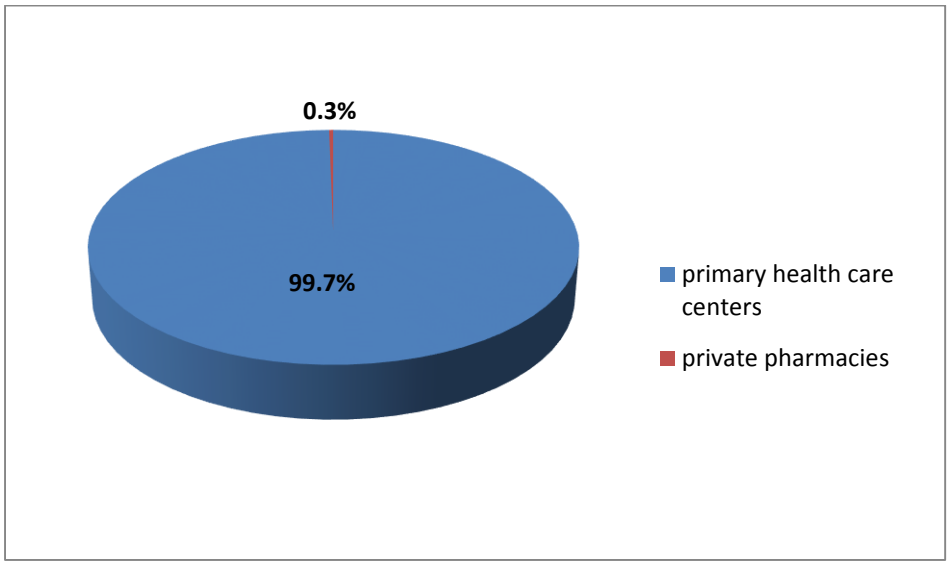


Figure (5.16): The distribution of the participants by the place from where they got their medication.

Also, the majority of the participants (96.7%, n=290) indicated that they brought their own medication themselves, 1.7% (n=5) reported their families, and 1.7% (n=5) indicated others such as friends or neighbors (see figure 5.17).

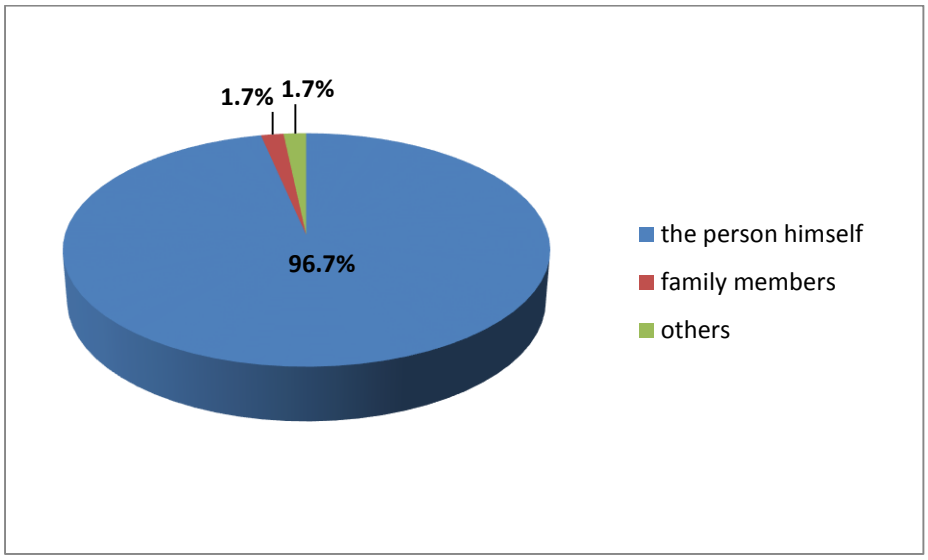


Figure (5.17): The distribution of the participants by the one who brought their psychiatric medication(s).

For the method of payment for their medication, 51% (n=153) stated that they paid for some drugs and got others for free, 48.7% (n=146) indicated that they got all their drugs for free, and 0.3% (n=1) claimed that they paid full price of the drugs (see figure 5.18).

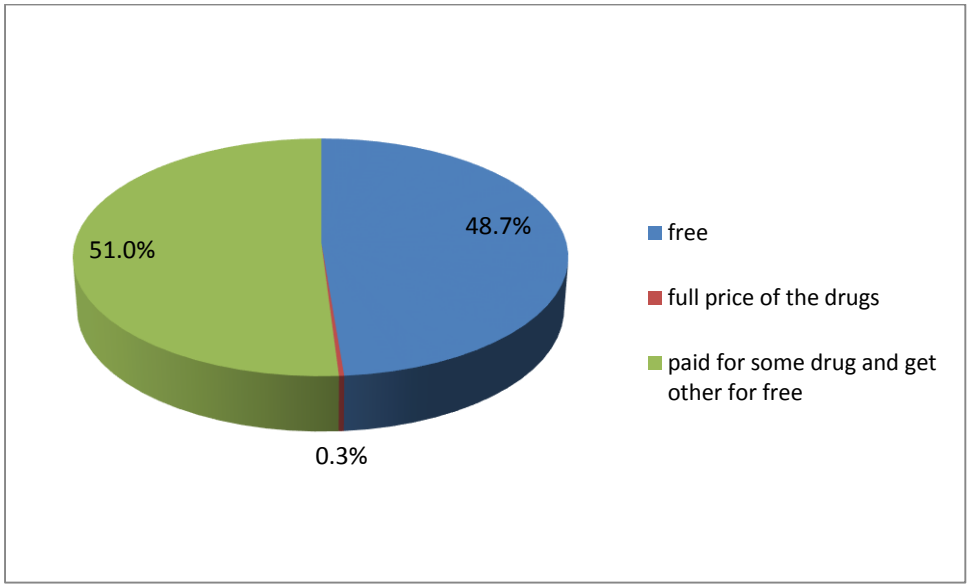


Figure (5.18): The distribution of the participants by the payment for their medication.

Also, two third of the participants (62%, n=186) reported that none of their family member had any mental problems and 38% (n=115) reported that they had family members with mental problems (see figure 5.19).

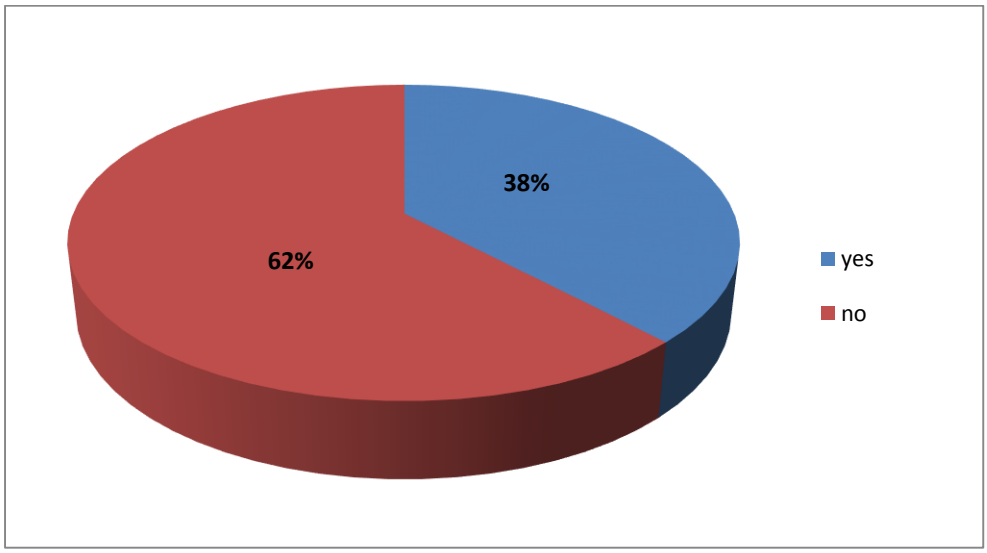
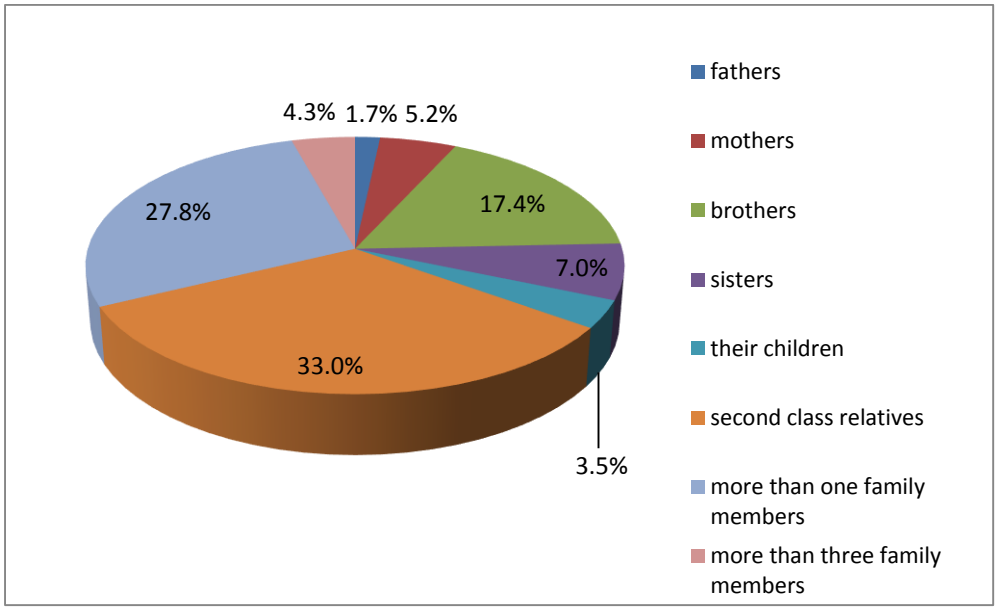


Figure (5.19): The distribution of the participants by if their family members had mental problems.

Those who have family members with mental problems, 33% (n=38) of them said this family member were a second class relative such as uncles and aunts, 17.4% (n=20) reported brothers, 7% (n=8) stated sisters, 5.2% (n=6) stated mothers, 3.5 (n=4) said their children, 1.7% (n=2) reported fathers, 27.8% (n=32) stated more than one family members, 4.3% (n=5) said more than three family members (see figure 5.20).



Figure(5.20): The distribution of the participants by their family members with mental problems.

When the participants were asked about the number of times they took their drugs daily, they responded as the following: 22.3% (n=67) took it once a day, 39.7% (n=119) had it twice a day, 35.3% (n=106) had it three times a day and 2.7% (n=8) took it more than three times a day (see figure 5.21).

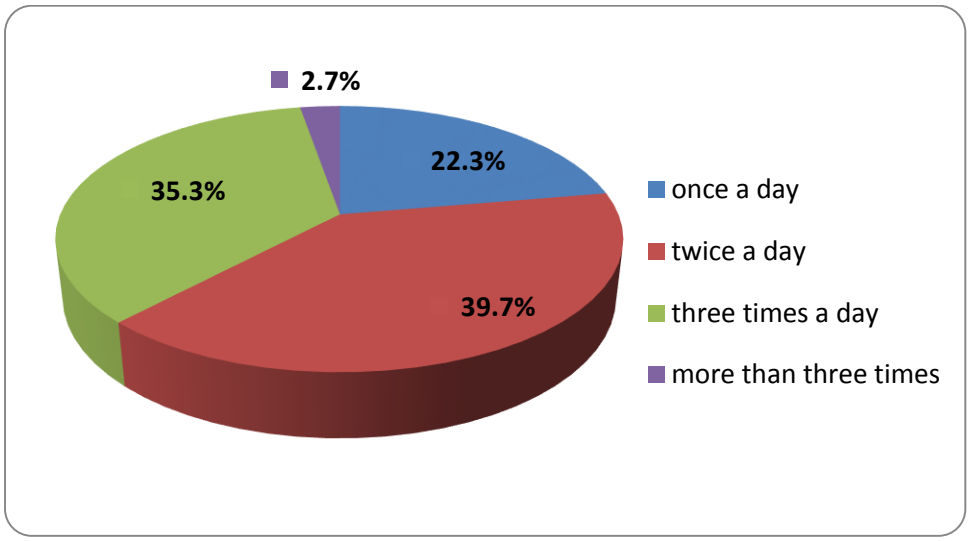


Figure (5.21): The distribution of the participants by the number of times they took their drugs daily.

Regarding the number of the times the participants stopped taking their prescribed medicine by themselves in the previous month, 82% (n=246) reported they never did that, 2.3% (n=7) reported once, 1.7% (n=5) reported twice, 2.7% (n=8) reported three times, 9.7% (n=29) did it more than three times, and 1.7% (n=5) could not remember (see figure 5.22).

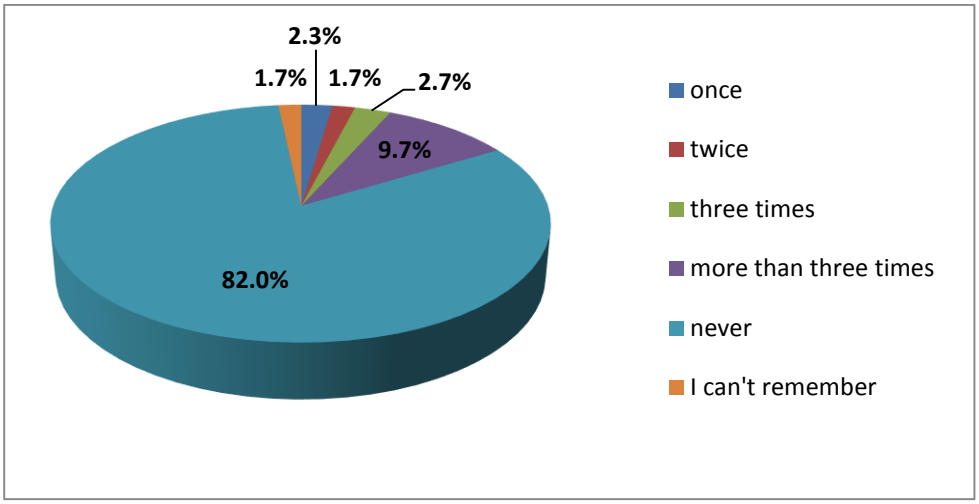


Figure (5.22): The distribution of the participants by the number of times they stopped taking their medications by themselves.

In addition, less than half of the patients (49.3%, n=148) reported that their doctors never changed their prescribed medicine since the time they prescribed it for them, 16.3% (n=49) stated that their doctor once changed their prescribed medicine, 12% (n=36) claimed twice, 12% (n=36) reported three times, and 10.3% (n=31) reported more than three times (see figure 5.23).

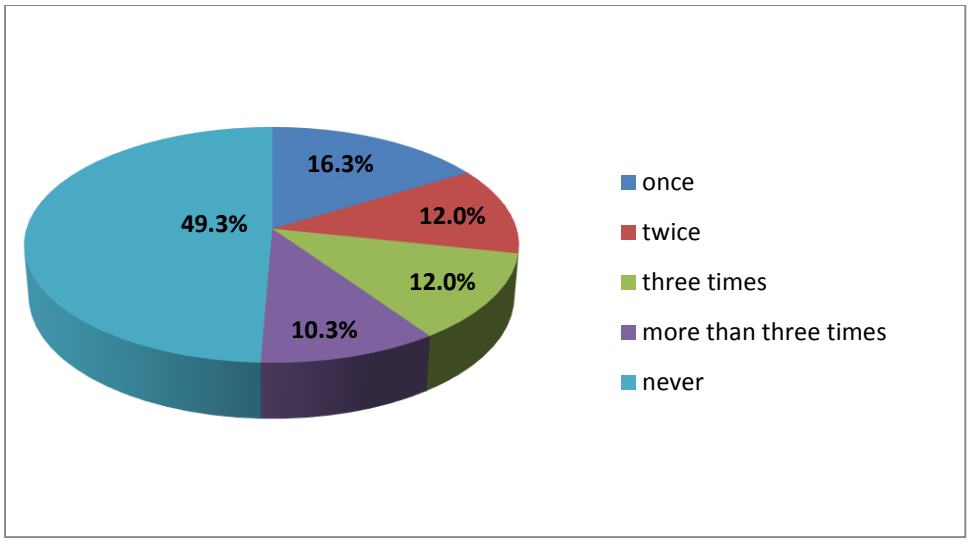


Figure (5.23): The distribution of the participants by the number of time the doctor changed their prescribed medicine.

Furthermore, nearly two third of the patients (61.7%, n=185) reported that they visited their psychiatrists every month, 33.3% (n=100) visited them at least once every three months, 1% (n=3) visited their doctors every six months, and 4% (n=12) didn't visit the doctor for more than six months (see figure 5.24).

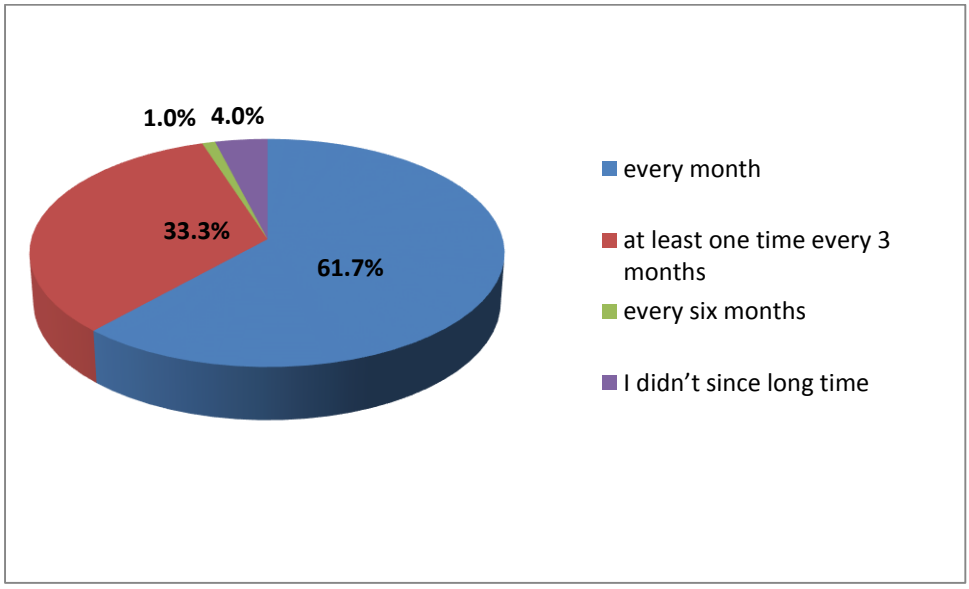


Figure (5.24): The distribution of the participants by the number of times they visited their psychiatrists.

Also, when the participants were asked if they were ever admitted to hospital since their diagnosis, more than one third of the participants (39.7%, n=119) reported that they were taken to the psychiatric hospital three times or more, 12% (n=36) claimed twice, 17% (n=51) reported once, and 31.3% (n=94) of them indicated that they never were taken to the psychiatric hospital (see figure 5.25).

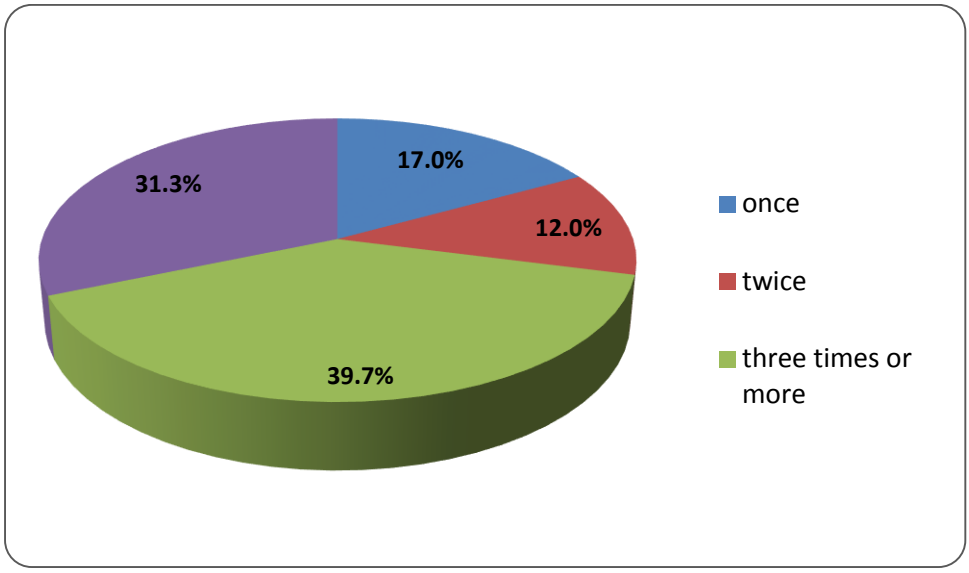


Figure (5.25): The distribution of the participants by the number of times they were taken to the psychiatric hospital.

For the need to take their drugs, the majority of the participants (94.3%, n=283) reported that they need medication for their mental problem(s) and 5.7% (n=17) claimed that they did not need such medications (see figure 5.26).

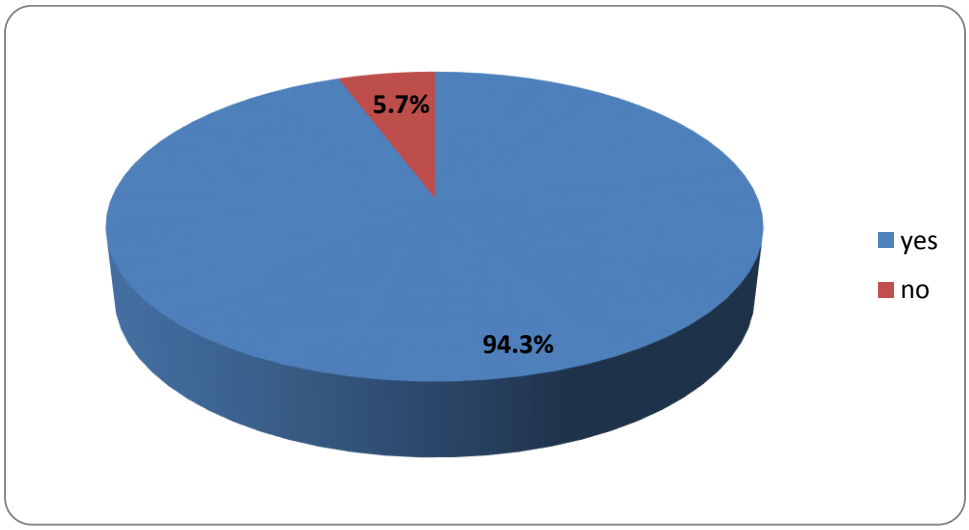


Figure (5.26): The distribution of the participants by the need for medication for their mental problems.

Moreover, most of the participants (87.7%, n=263) indicated that they didn't believe that there is a need to visit religious, folk, or traditional healers for their mental problem and 12.3% (n=37) reported that they believed they need that (see figure 5.27).

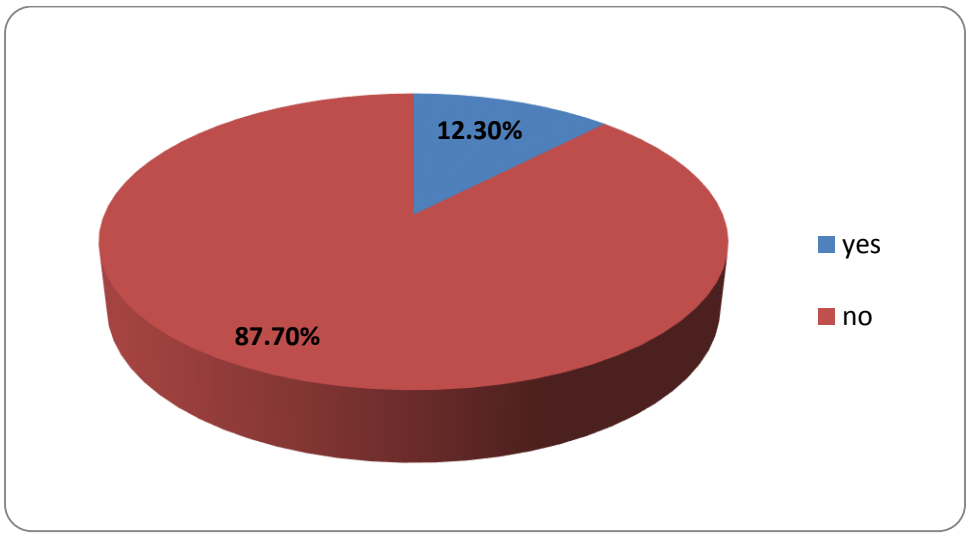


Figure (5.27): The distribution of the participants who believed they need to visit religious, folk, or traditional healers for their mental problems.

Also, the participants were asked if they visited religious, folk, or traditional healers for their mental problems, and more than half of the participants (57.3%, n=172) reported they visited religious, folk, and traditional healers for their mental problems and 42.7% (n=128) reported they didn't do that (see figure 5.28).

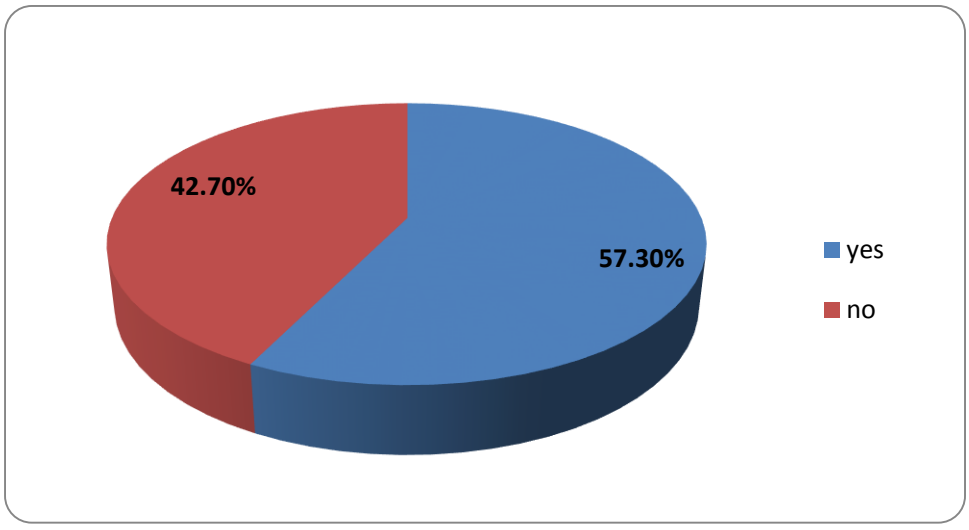


Figure (5.28): The distribution of the participants who visited religious, folk, or traditional healers for their mental problems.

5.4.2 Factor two: Knowledge and perception of mental problems related questions

To assess knowledge and perception, sixteen questions were included. The questions discussed the main aspects of schizophrenia and its treatment, side effects and stigma as seen in table (5.7). The findings showed a variation in the lack of knowledge and mainly in questions related to treatment of mental problems. For example, 81.1% (n=244) of the participants reported that mental problem is “always or often” well controlled, 12.7% (n=38) indicated that mental problem is “always and often” inherited while 80.3% (n=241) said it is “rarely or never” inherited, 14.3% (n=43) said that there was “always and often” a difference in the risk of getting mental disorder between males and females while 68% (n= 204) responded as (rarely and never).

Furthermore, 85.7% (n=257) thought that decreasing tension or anger “always or often” helped them in controlling their psychological problem(s), and 10.7% (n=32) responded as “sometimes”. Also, 63.6% (n=191) reported that physical activities “always or often” helped them in reducing their tension

Moreover, 17% (n=51) reported that they “always or often” felt that it was not necessary to take their medications and 13.3% (n=40) indicated as “sometimes”. Also, 11.7% (n=35) thought that it was “always and often” safe to increase or decrease their dose without consulting their doctors. Moreover, 45.7% (n=137) of participants believed that mental illness “always or often” could be prevented whereas 31% (n=90) of them believed it as “sometimes”. Finally, 70.6% (n=212) of them said that the stigma of their psychological problem “rarely or never’ decreased their desire to take their medications (see table 5.11).

Also, 71% (n= 222) of the participants indicated that medication have “rarely or never” have serious side effects that may affects their health.

Finally, 74.9% (n=225) stated that “rarely or never” the people around them treat them in a bad way because of their mental problem and so it decreased their desire to take their medication and 14.4% (n=40) indicated as “sometimes”. Further, 70.7% (n=212) reported that the stigma of their mental problem “rarely or never” decreased their desire to take their medication whereas 21.30 (n=64) of them said “sometimes”. Finally, 76.70 (n=230) thought that going to a mental health center or clinic will “rarely or never” reduce their desire to take their medication.

Table (5.7): The participants' answers to the questions related of their knowledge and perception of their psychological problem.

Variable		always	often	sometimes	rarely	never	Total
In general I consider myself in good health.	No.	85	149	44	17	5	300
	%	28.30	49.70	14.70	5.70	1.60	100
My mental problem is well controlled.	No.	129	115	36	11	9	300
	%	43.00	38.30	12.00	3.70	3.00	100
I consider my mental problem as a serious problem that needs treatment.	No.	199	55	22	10	14	300
	%	66.30	18.30	7.30	3.40	4.70	100
I think that my mental problem has hereditary basis.	No.	17	21	21	21	220	300
	%	5.70	7.00	7.00	7.00	73.30	100
I think that being male or female will affect the risk of having a mental disorder.	No.	12	31	53	100	104	300
	%	4.00	10.30	17.70	33.30	34.70	100
I think that decreasing tension or anger will help me in controlling my mental problem(s).	No.	116	141	32	7	4	300
	%	38.70	47.00	10.70	2.30	1.30	100
I think that physical activities will help me in reducing my tension.	No.	109	82	49	45	15	300
	%	36.30	27.30	16.30	15.10	5.00	100
I take my medication for the treatment and the alleviation of my mental problem.	No.	178	83	25	7	7	300
	%	59.50	27.80	8.40	2.30	2.00	100
I think that my medication(s) help me to control my psychological problem(s).	No.	183	75	28	7	7	300
	%	61.20	25.10	9.40	2.30	2.00	100
I feel it is not necessary to take my medication.	No.	25	26	40	45	164	300
	%	8.30	8.70	13.30	15.00	54.70	100
I think it's safe for me to reduce or increase the dosage without consulting my doctor.	No.	10	25	30	49	186	300
	%	3.30	8.40	10.00	16.40	61.90	100
I think that my medications have serious side effects that may affect my health.	No.	10	21	47	58	164	300
	%	3.30	7.00	15.70	19.30	54.70	100
I think mental illness can be prevented.	No.	33	104	93	46	24	300
	%	11.00	34.70	31.00	15.30	8.00	100
The people around me treat me in a bad way because of my mental problem and so it decreases my desire to take my medication(s).	No.	5	30	40	76	149	300
	%	1.70	10.00	13.40	25.40	49.50	100
The stigma of my mental problem decreases my desire to take my medication(s).	No.	8	16	64	94	118	300
	%	2.70	5.30	21.30	31.30	39.40	100
Going to a mental health centers or clinics reduce my desire to take my medicines regularly.	No.	7	17	46	61	169	300
	%	2.30	5.70	15.30	20.30	56.40	100

5.4.3. Factor three: The duration of illness related questions

This section assessed the effect of illness duration on the participants' compliance with their treatment regimen as seen in table (5.8) and it included two questions. For example, more than half of the participants' (64.7%, n=194) answered "rarely and never" that the long duration of their mental problem affected their desire to take drugs, and 17.7% (n=53) responded "sometimes". Whereas, 34.3% (n=103) reported that knowing that mental illness is a chronic disease "rarely or never" made them feel sad and frustrated. 28.7% (n=86) stated it as "always or often", 37% (n=111) responded it as "sometimes".

Table (5.8): The participants' responses to the questions related to the duration of illness and its effect on their compliance with treatment.

Variable	always		often	sometimes	rarely	never	Total
The long duration of my mental problem(s) affect my desire to take my medication.	No.	11	42	53	81	113	300
	%	3.7	14.0	17.7	27.0	37.6	100
Because mental illness is a chronic disease, it makes me feel sad and frustrated.	No.	23	63	111	52	51	300
	%	7.7	21.0	37.0	17.3	17.0	100

5.4.4. Factor four: The drugs' regimen related questions

It included four questions to assess the effect of the drugs' regimen on the participants' compliance as seen in table (5.9). In general, results showed that patients had commitment to their drugs. For example, 69.4% (n=208) indicated that the frequent dosing of their drugs as they reported "rarely and never" affected their desire to take them, 16% (n=48) said their desire to take the drugs was "sometimes" affected by the frequent dosing, 90.7% (n=175) reported that their desire to take the anti-psychotic medication was "rarely and never" affected by the frequency of drugs which they took.

Regarding the ability to remember their drugs regimen all the time, 9.7% (n=29) of the participants said it was "always and often" difficult to remember their drugs regimen all the time, and 18% (n=54) responded "sometimes". Finally, 14% (n=42) stated that the frequent change of their drugs' regimen by their doctor "always or often" decreased their desire to take them whereas 73% (n=219) of them stated it as "rarely or never".

Table (5.9): The participants' responses to the questions related to the drugs' regimen.

Variable		always	often	sometimes	rarely	never	Total
Because I have to take my drug(s) many times a day, it decreases my desire to take them every day.	No.	7	37	48	86	122	300
	%	2.3	12.3	16.0	28.7	40.7	100
Because I have to take my drug(s) many times a day, it is difficult for me to remember this all the time.	No.	6	23	54	97	120	300
	%	2.0	7.7	18.0	32.3	40.0	100
Changing my drugs-regimen by my doctors frequently decreases my desire to take these drugs.	No.	9	33	39	78	141	300
	%	3.0	11.0	13.0	26.0	47.0	100
The drugs I take for my other chronic conditions decrease my desire to take my anti-psychotic medication.	No.	2	8	8	9	273	300
	%	0.6	2.7	2.7	3	91	100

5.4.5. Factor five: The participants' relationship with their doctor related questions

As seen in table (5.10), this section included thirteen questions that assessed the effect of participants' relationship with the physician on their compliance with their treatment regimen or plan. In general, the findings revealed a good relationship between the participants and their treating doctors. For example, 59.3% (n=178) of the participants indicated that they "always or often" were seen by the same doctor when they visited the clinic, and 36% (n=108) reported that as "sometimes".

Regarding the way they were treated during their visits to the clinic, 97.3% (n=292) of participants indicated that the doctor "always or often" treated them with respect during their visit. Further, 92.6% (n=287) of the participants reported that they were "always or often" satisfied with the medical care they received in the clinic. Whereas, 66% (n=198) of the participants stated that the doctor "rarely or never" hurried too much in order to finish the visit quickly, only 13.3% (n=40) answered "always or often", and 20.7% (n=62) responded as "sometimes".

Furthermore, 86.3% (n=259) of them indicated that the doctor "always or often" allowed them to say anything they wanted, and 8.3% (n=25) reported that as "sometimes". Whereas, 81.5% (n=244) indicated that the doctor "rarely or never" made them feel foolish, 11.1% (n=33) responded as "sometimes". Also, 48.6% (n=171) reported that they "always or often" accessed their doctor for a help without any problem. Finally, 95.6% (n=287)

stated that the medical staff “always or often” dealt with them friendly and with respect, whereas, 29.7% (n=89) responded that they “sometimes” wait for long time in the waiting room before seeing the doctor.

Table (5.10): The participants’ responses to the questions related to their relationship with the doctor.

Variable		always	often	sometimes	rarely	never	Total
The same doctor sees me in every visit I go to the clinic.	No.	52	126	108	11	3	300
	%	17.3	42.0	36.0	3.7	1.0	100
The doctor treats me with respect when I visit him in the clinic.	No.	267	25	7	1	0	300
	%	89.0	8.3	2.3	0.4	0.0	100
I’m satisfied with the medical care I receive in the clinic.	No.	193	85	16	4	2	300
	%	64.3	28.3	5.3	1.4	0.7	100
The doctor allows me to say anything I think it’s important for my health during the visit.	No.	184	75	25	13	3	300
	%	61.3	25.0	8.3	4.4	1.0	100
The doctor makes me feel foolish sometimes during the visit.	No.	7	15	33	94	151	300
	%	2.3	5.0	11.0	31.3	50.3	100
The doctor acts too serious/formal and impersonal towards me.	No.	178	98	15	4	5	300
	%	59.3	32.7	5.0	1.3	1.7	100
The doctor during the examination or visit hurries too much to finish it quickly.	No.	12	28	62	72	126	300
	%	4.0	9.3	20.7	24.0	42.0	100
The doctor sometimes ignores what I tell him/her concerning my psychological problem	No.	6	22	31	79	162	300
	%	2.0	7.4	10.3	26.3	54	100
If I have a medical question, I can reach the doctor for help without any problem	No.	25	121	95	41	18	300
	%	8.3	40.3	31.7	13.7	6.0	100
The doctor listen carefully to what I have to tell him/her	No.	189	81	22	5	3	300
	%	63.0	27.0	7.3	1.7	1.0	100
My doctor spends enough time with me during the visit	No.	189	64	37	3	7	300
	%	63.0	21.3	12.3	1.0	2.3	99.9
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	No.	232	55	10	2	1	300
	%	77.3	18.3	3.3	.7	.3	99.9
When I visit the clinic, I wait long time in the waiting room before I can See the doctor	No.	14	27	89	103	67	300
	%	4.7	9.0	29.7	34.3	22.3	100

5.4.6. Factor six: The clarity of drugs' usage instructions related questions

Further, the questionnaire included seven questions related to the clarity of the drugs-usage instructions given to the patient by their treating doctor and the medical staff in general as shown in table (5.11).

The findings showed that participants were satisfied with the clarity of drugs-usage instructions given to them. For example, the majority of the participants (95.7%, n=287) indicated that the drugs-usage instructions were "always or often" clear and most of the participants (85.6%, n=266) indicated that the staff "always or often" explained and gave them accurate information about the importance of controlling their mental symptoms. Also, 75.3% (n=226) of them reported that the treating doctor "always or often" gave them information or special advices to maintain their health and avoid relapses, 11.3% (n=34) said "sometimes" and 13.3% (n=40) responded that they were "rarely or never" advised in this regard.

Furthermore, 89.6% (n=269) reported that the medical staff "always or often" used clear and simple language when they gave them instructions about their mental problems. Also, 41% (n=122) stated that the doctor "always or often" explained to them the reason for changing their drugs, and 22.5% (n=67) reported it as "sometimes". Moreover 39% (n=117) said that the doctor "rarely or never" explained the reason for performing a medical test he recommended. Further, 75.3 (n=226) responded that the doctor "always or often" gave them advices and information about different ways to avoid relapses and 67.4% (n=202) indicated that the doctor "rarely or never" used difficult medical terms without explaining their meanings to them.

Table (5.11): The participants' responses to the questions related to the clarity of drugs' usage instructions.

Variable		always	often	sometimes	rarely	never	Total
The drug- use instructions written by the doctor are clear to me.	No.	152	135	13	0	0	300
	%	50.7	45.0	4.3	0.0	0.0	100
The medical staffs (nurse/doctor) explain to me and give me accurate information about the importance of controlling my psychological symptoms.	No.	208	58	23	5	6	300
	%	69.3	19.3	7.7	1.7	2.0	100
The medical staffs (nurse/doctor) use clear and simple language when they give me instructions about my psychological problem and ways to control it.	No.	211	58	22	4	5	300
	%	70.3	19.3	7.3	1.3	1.7	99.9
My doctor explains me the reason for performing a medical test he recommends.	No.	37	75	71	62	55	300
	%	12.3	25.0	23.7	20.7	18.3	100
When my doctor changes my drugs, he explains to me the reason for that.	No.	41	81	67	53	58	300
	%	13.7	27.0	22.4	17.6	19.3	100
The doctor uses difficult medical terms without explaining what they mean.	No.	18	36	44	71	131	300
	%	6.0	12.0	14.7	23.7	43.7	100
The doctor gives me advices and information about different ways to avoid relapses.	No.	148	78	34	22	18	300
	%	49.3	26.0	11.3	7.3	6.0	99.9

5.4.7. Factor seven: The family support related questions

The degree of support that the family provided to their patients with schizophrenia in order to get the best results of the treatment plan is another critical factor that might affect patients' compliance. This section consisted of six questions to assess this variable as seen in table (5.12) below. In general, the findings showed that patients received good support from their families. For example, 88.3% (n= 265) reported that their family members "always or often" reminded them about their medications, 8.7% (n=26) responded as "sometimes", and 3% (n=9) stated "rarely or never"

Furthermore, 85.7% (n=257) reported that their family members "always or often" helped them in taking their medications, 81% (n=243) stated that their family members "always or often" helped them financially to get their medications when needed, and 92% (n=277) said

that their family members “always or often” encouraged them to be compliance with their medications and treatment plan.

Table (5.12): The participants’ responses to the questions related to their family support.

Variable		always	often	sometimes	rarely	never	Total
My family members remind me about my medications.	No.	151	114	26	5	4	300
	%	50.3	38.0	8.7	1.7	1.3	100
My family members help me in taking my medications.	No.	195	62	25	8	10	300
	%	65.0	20.7	8.3	2.7	3.3	100
My family members help me financially to get my medications when I need.	No.	145	98	27	18	12	300
	%	48.3	32.7	9.0	6.0	4.0	100
My family members help me in reaching the mental health clinic if I’m tiered or sick.	No.	174	83	29	7	7	300
	%	58.0	27.7	9.7	2.3	2.3	100
My family members help me in dealing with the side effects of my medications.	No.	152	100	30	7	11	300
	%	50.6	33.4	10.0	2.3	3.7	100
My family members encourage me to be compliant with my medication and treatment plan.	No.	232	45	18	1	4	300
	%	77.3	15.0	6.0	.4	1.3	100

5.4.8 Factor eight: The regularity on appointments and treatment plan related questions

Eight questions were included in this section to assess the participants’ regularity on the doctor appointments and their adherence to the treatment plans as recommended by their doctors as seen in table (5.13). In general, the result showed that participants were regular on appointments and treatment plan. For example, the vast majority of them (90.3%, n=271) indicated that they were “always or often” regular on their doctor’s appointments, 5.3% (n=16) indicated that they were “sometimes”, and only 4.3% (n=13) reported that they were “rarely or never” regular on their doctor appointments.

Regarding how often they took their drugs, 91.7% (n=275) said that they “always or often” did that, and 4% (n=12) responded “sometimes”. Further, 65.6% (n=196) of the participants stated that they “rarely or never” reduced or increased their medication(s) without consulting their doctors and 17.1% (n=51) reported it as “sometimes”.

Furthermore, 64.7% (n=194) stated that when they felt better they “rarely or never” stopped taking their medications, and 17.3% (n=52) responded it as “sometimes”. Finally, 82.3% (n=247) indicated that they “always or often” visited their doctor personally for follow-up and for drug prescription, and 11% (n=33) reported that as “sometimes”.

Table (5.13): The respondents’ answers to the questions related to their regularity on their doctor appointment and treatment plans.

Variable		always	often	sometimes	rarely	never	Total
I’m always regular at my doctor’s appointments.	No.	202	69	16	7	6	300
	%	67.3	23.0	5.4	2.3	2.0	100
I take my drugs in a regular basis, as described by my doctor.	No.	209	66	12	6	7	300
	%	69.7	22.0	4.0	2.0	2.3	100
I forget to take my drugs because of being busy in other things in life.	No.	7	30	45	62	156	300
	%	2.3	10.0	15.1	20.7	51.9	100
When I feel better, I stop taking my medication(s).	No.	11	43	52	29	165	300
	%	3.7	14.3	17.3	9.7	55.0	100
If I feel worse because of the side effects of my medicine(such as Insomnia, headache, cramping), I stop taking it without consulting my doctor	No.	9	24	23	49	195	300
	%	3.0	8.0	7.7	16.3	65.0	100
I always visit my doctor personally for follow-up and drug prescription.	No.	172	75	33	11	9	300
	%	57.3	25.0	11.0	3.7	3.0	100
I reduce or increase my medication(s) without consulting my doctor.	No.	11	41	51	43	154	300
	%	3.7	13.7	17.1	14.4	51.2	100
I feel that there is no need to take my medicine because I don’t have a problem requiring medication.	No.	17	27	52	32	172	300
	%	5.7	9.0	17.3	10.7	57.3	100

5.4.9. Factor nine: The cost of treatment related questions

In this section, six questions discussed the effect of treatment’s cost on the participants’ compliance with their psychological problem treatment plans as shown in table (5.14). For example, the participants were asked if the amounts that they paid for their health care were more than what they could normally afford and 24% (n=72) of the participants indicated that the health care costs were “always or often” more than what they could afford, 15.3% (n=46) said that costs were “sometimes” beyond their affordability and 60.6% (n=182) said that the costs were “rarely or never” more than what they could afford.

Also, 59.2% (n=178) of the participants reported that the high cost of their medication and treatment “rarely or never” made them less committed to their medication and treatment plan, and 21.1% (n=63) responded that as “sometimes”. Furthermore, 50.7% (n=158) reported that they “rarely or never” had financial problems to cover their medical needs, and 24% (n=72) responded it as “sometimes”. Finally, 52.7% (n=158) stated that they “rarely or never” had worries about having to pay large medical bills, and 22% (n=66) reported that as “sometimes”.

Table (5.14): The participants’ answers to the questions related to the cost of treatment and their compliance with the treatment plans.

Variable		always	often	sometimes	rarely	never	Total
I have to pay for my medical care more than what I can afford.	No.	26	46	46	70	112	300
	%	8.7	15.3	15.3	23.3	37.3	99.9
I have financial problems to cover my medical needs.	No.	29	47	72	65	87	300
	%	9.7	15.7	24.0	21.7	29.0	100
I have worries about having to pay large medical bills.	No.	27	49	66	62	96	300
	%	9.0	16.3	22.0	20.7	32.0	99.9
I think that the amount I have to pay to cover my treatment expenses are reasonable.	No.	63	38	65	55	79	300
	%	21.0	12.7	21.7	18.3	26.3	100
High cost of my medication and treatment plan make me Less committed.	No.	12	47	63	53	125	300
	%	4.0	15.7	21.1	17.7	41.5	100
Cheap transportation costs to the mental health clinics makes me more committed to seek treatment and visit the doctor	No.	245	25	15	2	13	300
	%	81.9	8.4	5.0	.7	4.1	100

5.5. Cross tabulation between the participants’ responses to the questionnaire items and independent variables

Cross-tabulation by using the Chi-squared test was done to assess the relationship between the factors in different sections of the questionnaire and the independent variables such as gender, age, educational, place of residency, income level, marital status, and work statues. The statistical significance was defined as p-value ≤ 0.05. Each one is discussed in more details below.

5.5.1. Cross-tabulation between the participants' responses to the questionnaire items by their gender

The findings revealed that there were no statistically significant relationship between males and females' responses to any of the questions related to the participants' knowledge and perception of their illness (see table 5.1, appendix D), duration of their illness (see table 5.2, appendix D), the drugs regimen (see table 5.3, appendix D), participants' relationship with their doctor (see table 5.4, appendix D), participants' family support (see table 5.5, appendix D), and questions related to the participants' regularity and treatment follow up (see table 5.6, appendix D).

For the clarity of drugs' usage instruction, cross tabulation showed no statistical significant relationship with their gender except questions (q3 and q6), (see table 5.15). For example, the participants were asked about the use of clear and simple language of information given to them by the medical staff about their mental problems, and 90.1% (n=201) of the males versus 88.9% (n=88) of the females indicated that the medical staff members "always or often" gave them clear information about the mental problems, while 6% (n=12) of males versus 10.1% (n=10) of females said "sometimes" and 4% (n=8) of males versus 1% (n=1) of females reported that as "rarely or never" (p=0.03),

Also, the participants were asked about the doctors use of difficult medical terms without explaining them to the patients and 62.7% (n=126) of the males versus 76.7% (n=76) of the females reported that the doctors "rarely or never" used difficult terms with explaining them to the patients, while 16.4% (n=33) of the males versus 11.1% (n=11) of the females said "sometimes and 20.9% (n=42) of the males versus 12.1% (n=12) indicated that as "always or often" (p=0.04).

Table (5.15): Cross-tabulation between the participants' responses to the questions related to clarity of treatment and gender.

Variable	Sex	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The drug- use instructions written by the doctor are clear to me	M	93	46.3	100	49.8	8	4.0	0	0.0	0	0.0	0.06
	F	59	59.6	35	35.4	5	5.1	0	0.0	0	0.0	
The medical staffs (nurse/doctor) explain to me and give me accurate information about the importance of controlling my psychological symptoms	M	142	70.6	34	16.9	16	8.0	4	2.0	5	2.5	0.53
	F	66	66.7	24	24.2	7	7.1	1	1.0	1	1.0	
The medical staff (nurse/doctor) use clear and simple language when they give me instructions about my psychological problem and ways to control it	M	134	66.7	47	23.4	12	6.0	3	1.5	5	2.5	0.03
	F	77	77.8	11	11.1	10	10.1	1	1.0	0	0.0	
My doctor explains me the reason for performing a medical test he recommends	M	28	13.9	46	23.4	47	22.7	42	20.9	38	18.9	0.64
	F	9	9.1	29	29.3	24	24.2	20	20.2	17	17.2	
When my doctor changes my drugs, he explains to me the reason for that	M	26	13.0	54	27.0	49	24.5	34	17.0	37	18.5	0.81
	F	15	15.3	27	27.6	18	18.4	19	19.4	19	19.4	
The doctor uses difficult medical terms without explaining what they mean	M	14	7.0	28	13.9	33	16.4	38	18.9	88	43.8	0.04
	F	4	4.0	8	8.1	11	11.1	33	33.3	43	43.4	
The doctor gives me advices and information about different ways to avoid relapse.	M	102	50.7	52	25.9	21	10.4	16	8.0	10	5.0	0.72
	F	46	46.5	26	26.3	13	13.1	6	6.1	8	8.1	

For the cost of treatment plan, cross tabulation showed that only two questions had statistically significant relationship with gender (q6) (see table 5.16). For example, 93.5% (n=187) of males versus 83.9% (n=83) of females indicated that cheap transportation costs to the mental health clinics made them "always or often" more committed to seek treatment and visited their doctor, 2.5% (n=5) of males versus 10.1% (n=6) of females responded "sometimes" and 4% (n=8) of males versus 6.1% (n=6) of females responded that as "rarely or never" (P=0.03). Also, 48.8% (n=98) of males versus 54.6% (n=54) reported that that they "rarely or never" have financial problems to cover my medical needs, 27.9% (n=56) of males versus 16.2 (n=16) responded "sometimes"

Table (5.16): Cross-tabulation between the participants' responses to the questions related to cost of treatment and gender.

Variable	gender	always		often		sometimes		rarely		Never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I have to pay for my medical care more than what I can afford.	M	16	8.0	30	14.9	32	15.9	50	24.9	73	36.3	0.85
	F	10	10.1	16	16.2	14	14.1	20	20.2	39	39.4	
I have financial problems to cover my medical needs.	M	20	10.0	27	13.4	56	27.9	47	23.4	51	25.4	0.05
	F	9	9.1	20	20.2	16	16.2	18	18.2	36	36.4	
I have worries about having to pay large medical bills.	M	20	10.0	36	17.9	43	21.4	44	21.9	58	28.8	0.41
	F	7	7.1	13	13.1	23	23.2	18	18.2	38	38.4	
I think that the amount I have to pay to cover my treatment expenses are reasonable.	M	46	22.9	25	12.4	47	23.4	33	16.4	50	24.9	0.46
	F	17	17.2	13	13.1	18	18.2	22	22.2	29	29.3	
High cost of my medication and treatment plan make me Less committed.	M	8	4.0	37	18.5	46	23.0	34	17.0	75	37.5	0.16
	F	4	4.0	10	10.1	17	17.2	19	19.2	49	49.5	
Cheap transportation costs to the mental health clinics makes me more committed to seek treatment and visit the doctor.	M	169	84.5	18	9.0	5	2.5	2	1.0	6	3.0	0.03
	F	76	76.8	7	7.1	10	10.1	0	0.0	6	6.1	

5.5.2. Cross tabulation between the participants' responses to the questionnaire items and their age group

Only one question (q5) related to the participants' knowledge had statistically significant with age group of the participants. For example, 22.6% (n=12) of participants aged from 15 to 30 years versus 12.8% (n=16) aged from 31 to 45 years versus 14.1% (n=14) aged from 46 to 60 years and 4.3% (n=1) aged over sixty years reported that being male or female would "always or often" affected the risk of having a mental disorder (P=0.02), (see table 5.17).

Table (5.17): Cross-tabulation of the participants' responses to the questions related to knowledge and perception of the psychological problem and age.

Variable	Age	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
In general I consider myself in good health	15-30	18	34.0	22	41.5	9	17.0	3	5.7	1	1.9	0.76
	31-45	40	32.0	58	46.4	19	15.2	6	4.8	2	1.6	
	46-60	23	23.2	57	57.6	11	11.1	6	6.1	2	2.0	
	>60	18	34.0	22	41.5	9	17.0	3	5.7	1	1.9	
My psychological problem is well controlled	15-30	21	39.6	16	30.2	11	20.7	2	3.8	3	5.7	0.42
	31-45	54	43.2	51	40.8	13	10.4	6	4.8	1	0.8	
	46-60	44	44.4	39	39.4	9	9.1	2	2.0	5	5.1	
	>60	10	43.5	9	39.1	3	13.0	1	4.3	0	0.0	
I consider my psychological problem as a serious problem that needs treatment	15-30	33	62.3	8	15.1	5	9.4	2	3.8	5	9.4	0.79
	31-45	85	68.0	23	18.4	8	6.4	4	3.2	5	4.0	
	46-60	63	63.6	20	20.2	9	9.2	3	3.0	4	4.0	
	>60	18	78.3	4	17.4	0	0.0	1	4.3	0	0.0	
I think that my psychological problem has hereditary basis	15-30	4	7.5	4	7.5	4	7.5	3	5.7	38	71.7	0.36
	31-45	8	6.4	12	9.6	13	10.4	8	6.4	84	67.2	
	46-60	3	3.0	5	5.1	3	3.0	7	7.1	81	81.8	
	>60	2	8.7	0	0.0	1	4.3	3	13.0	17	73.9	
I think that being male or female will affect the risk of having a mental disorder	15-30	6	11.3	6	11.3	11	20.8	8	15.1	22	41.5	0.02
	31-45	4	3.2	12	9.6	18	14.4	42	33.6	49	39.2	
	46-60	2	2.0	12	12.1	19	19.2	40	40.4	26	26.3	
	>60	0	0.0	1	4.3	5	21.7	10	43.5	7	30.4	
I think that decreasing tension or anger will help me in controlling my psychological problem(s)	15-30	22	41.5	22	41.5	5	9.4	2	3.8	2	3.8	0.64
	31-45	49	39.2	62	49.6	11	8.8	3	2.4	0	0.0	
	46-60	39	39.4	43	43.4	13	13.1	2	2.0	2	2.0	
	>60	6	26.1	14	60.9	3	13.0	0	0.0	0	0.0	
I think that physical activities will help me in reducing my tension	15-30	23	43.4	11	20.8	8	15.1	7	13.2	4	7.5	0.14
	31-45	51	40.8	35	28	22	17.6	14	11.2	3	2.4	
	46-60	31	31.3	26	26.3	16	16.2	18	18.2	8	8.2	
	>60	4	17.4	10	43.5	3	13.0	6	26.1	0	0.0	
I take my medication for the treatment and the alleviation of my mental problem.	15-30	31	77.4	14	26.4	6	11.3	1	1.9	1	1.9	0.81
	31-45	77	61.6	34	27.2	9	7.2	2	1.6	3	2.4	
	46-60	60	60.6	25	25.3	7	7.1	4	4.1	2	2.0	
	>60	10	43.5	10	43.5	3	13.0	0	0.0	0	0.0	

Table (5.17): Cross-tabulation of the participants' responses to the questions related to knowledge and perception of the psychological problem and age.

Variable	Age	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that my medication(s) help me to control my psychological problem(s)	15-30	29	54.7	15	28.3	7	13.2	0	0.0	2	3.8	0.84
	31-45	80	64.0	29	23.2	9	7.2	5	4.0	2	1.6	
	46-60	59	59.6	25	25.3	10	10.1	2	2.0	2	2.0	
	>60	15	65.2	6	26.1	2	8.7	0	0.0	0	0.0	
I feel it is not necessary to take my medication	15-30	9	17.0	6	11.3	9	17.0	6	11.3	23	43.4	0.28
	31-45	10	8.0	8	6.4	16	12.8	17	13.6	74	59.2	
	46-60	5	5.1	10	10.1	14	14.1	16	16.2	54	54.5	
	>60	1	4.3	2	8.7	1	4.3	6	26.1	13	56.5	
I think it's safe for me to reduce or increase the dosage without consulting my doctor	15-30	2	3.8	5	9.4	4	7.5	10	18.9	32	60.4	0.94
	31-45	6	4.8	10	8.0	13	10.4	18	14.4	77	62.4	
	46-60	2	2.1	9	9.3	9	9.3	16	16.5	63	62.9	
	>60	0	0.0	1	4.3	4	17.4	5	21.7	13	56.5	
I think that my medications have serious side effects that may affect my health	15-30	3	5.7	5	9.4	11	20.8	9	17.0	25	47.2	0.60
	31-45	3	2.4	7	5.6	22	17.6	24	19.2	69	55.2	
	46-60	3	3.0	6	6.1	11	11.1	18	18.2	61	61.6	
	>60	1	4.3	3	13.0	3	13.0	7	30.4	9	39.1	
I think mental illness can be prevented	15-30	10	18.9	16	30.2	18	34	5	9.4	4	7.5	0.16
	31-45	13	10.4	46	36.8	44	35.2	13	10.4	9	7.2	
	46-60	10	10.1	33	33.3	25	25.3	22	22.2	9	8.1	
	>60	0	0.0	9	39.1	6	26.1	6	26.1	2	8.7	
The people around me treat me in a bad way because of my psychological problem and so it decreases my desire to take my medication(s)	15-30	1	1.9	7	13.2	8	15.1	9	17.0	28	52.8	0.76
	31-45	2	1.6	16	12.8	19	15.2	29	23.2	58	47.2	
	46-60	2	2.1	5	5.1	11	11.1	31	31.3	50	50.5	
	>60	0	0.0	2	8.7	2	8.7	7	30.4	12	52.2	
The stigma of my psychological problem decreases my desire to take my medication(s)	15-30	1	1.9	4	7.5	10	18.9	16	30.2	22	41.5	0.95
	31-45	4	3.2	6	4.8	28	22.4	36	28.8	51	40.8	
	46-60	3	3.1	5	5.1	22	22.2	36	36.4	33	33.3	
	>60	0	0.0	1	4.3	4	17.4	6	26.1	12	52.2	
Going to a mental health centers or clinics reduce my desire to take my medicines regularly	15-30	1	1.9	2	3.8	10	18.9	14	26.4	26	46.4	0.69
	31-45	4	3.2	6	4.8	23	18.4	25	20.0	67	53.2	
	46-60	2	2.1	7	7.1	11	11.1	16	16.2	63	63.6	
	>60	0	0.0	2	8.7	2	8.7	6	26.1	13	56.5	

Also, cross-tabulation did not reveal statistically significant relationship between age groups and any of the questions related to the duration of illness (see table 5.7, appendix D), participant's drugs' regimen (see table 5.8, appendix D), participant's relationship with their doctor (see table 5.9, appendix D), participant's regularity and treatment follow up (see table 5.10, appendix D), and the questions related to the cost of treatment (see table 5.11, appendix D).

Regarding the clarity of instruction of treatment, only two questions had statistically significant (q1, q6) relationship with age group (see table 5.18). For example, 96% (n=22) of participants aged over sixty years versus 96.9% (n=96) aged from 46 to 60 years versus 95.2% (n=119) aged from 31 to 45 years and 94.2% (n=50) aged from 15 to 30 years indicated that the drug- use instructions written by the doctor were "always or often" clear to them. Also 4% (n=1) aged over sixty years versus 3.1% (n=3) aged from 46 to 60 years versus 4.8% (n=3) aged from 31 to 45 years and 5.8% (n=1) aged from 15 to 30 years reported that as "sometimes" (P=0.04).

Further, 56% (n=13) of participants aged over sixty years versus 70.1% (n=69) aged from 46 to 60 years versus 68.2% (n=/85) aged from 31 to 45 years and 65.4% (n=35) aged from 15 to 30 years stated that the doctor "rarely or never" used difficult terms without explaining what they meant for them, while 4.0% aged from 60 years versus 14.4% aged from 45 to 60 years versus 14.3% aged from 30 to 45 years and 21.2% aged from 15 to 30 years reported that as "sometimes" (P=0.03).

Table (5.18): Cross-tabulation between the participants' responses to the questions related to clarity of treatment and age.

Variable	Age	always		often		sometimes		Rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The drug- use instructions written by the doctor are clear to me	15-30	36	67.9	14	26.4	3	5.7	0	0.0	0	0.0	0.04
	31-45	63	50.4	56	44.8	6	4.8	0	0.0	0	0.0	
	46-60	46	46.5	50	50.5	3	3.0	0	0.0	0	0.0	
	>60	7	30.4	15	65.3	1	4.3	0	0.0	0	0.0	
The medical staff (nurse/doctor) explain to me and give me accurate information about the importance of controlling my psychological symptoms	15-30	37	69.8	10	18.9	4	7.5	0	0.0	2	3.8	0.75
	31-45	85	68.0	22	17.6	12	9.6	3	2.4	3	2.4	
	46-60	69	69.7	23	23.3	4	4.0	2	2.0	1	1.0	
	>60	17	74	3	13.0	3	13.0	0	0.0	0	0.0	

Table (5.18): Cross-tabulation between the participants' responses to the questions related to clarity of treatment and age.

Variable	Age	always		often		sometimes		Rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The medical staff (nurse/doctor) use clear and simple language when they give me instructions about my psychological problem and ways to control it	15-30	38	71.7	10	18.8	2	3.8	0	0.0	3	5.7	0.38
	31-45	86	68.8	27	21.6	9	7.2	2	1.6	1	0.8	
	46-60	73	73.7	14	14.2	9	9.1	2	2.0	1	1.0	
	>60	14	60.9	7	30.4	2	8.7	0	0.0	0	0.0	
My doctor explains me the reason for performing a medical tests he recommend	15-30	8	15.1	14	26.4	8	15.1	8	15.1	15	28.3	0.09
	31-45	11	8.8	33	26.4	36	28.8	23	18.4	22	17.6	
	46-60	16	16.2	20	20.2	22	22.2	23	23.2	18	18.2	
	>60	2	8.7	8	34.8	5	21.7	8	34.8	0	0.0	
When my doctor changes my drugs, he explains to me the reason for that	15-30	8	15.1	13	24.5	15	28.3	5	9.4	12	22.7	0.86
	31-45	16	12.8	34	27.2	25	20.0	23	18.4	27	21.6	
	46-60	13	13.1	27	27.3	22	22.2	21	21.2	16	16.2	
	>60	4	17.4	7	30.5	5	21.7	4	17.4	3	13.0	
The doctor uses difficult medical terms without explaining what they mean	15-30	4	7.5	3	5.7	11	20.8	10	18.9	25	47.2	0.03
	31-45	9	7.2	13	10.4	18	14.4	28	22.4	57	45.6	
	46-60	1	1.0	15	15.2	14	14.1	25	25.3	44	44.4	
	>60	4	17.4	5	21.7	1	4.3	8	34.8	5	21.8	
The doctor gives me advices and information about different ways to avoid relapses	15-30	25	47.2	15	28.3	6	11.3	2	3.8	5	9.4	0.86
	31-45	64	51.2	31	24.8	15	12.0	7	5.6	8	6.4	
	46-60	47	47.5	25	25.3	11	11.1	11	11.1	5	5.0	
	>60	12	52.2	7	30.4	2	8.7	2	8.7	0	0.0	

Also, a cross tabulation between participants' responses to the questions related the family support and their age group revealed statistically significant relation only with one question (q2) (see table 5.19). For example 84% (n=21) of participants aged over sixty years versus 86.5% (n=85) aged from 46 to 60 years versus 83.3% (n=104) aged from 31 to 45 years and 90.4% (n=48) aged from 15 to 30 years reported that their family members "always or often" helped them in taking their medications. (p=0.01).

Table (5.19): Cross-tabulation between the participants' responses to the questions related to family support problem and age.

Variable	age	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members remind me about my medications	15-30	30	56.6	14	26.4	6	11.3	1	1.9	2	3.8	0.48
	31-45	66	52.8	46	36.8	10	8.0	2	1.6	1	0.8	
	46-60	45	45.5	43	43.4	9	9.1	2	2.0	0	0.0	
	>60	10	43.5	11	20.8	1	4.3	0	0.0	1	4.3	
My family members help me in taking my medications	15-30	33	62.3	15	28.3	1	1.9	0	0.0	4	7.5	0.01
	31-45	88	70.4	16	12.8	12	9.6	6	4.8	3	2.4	
	46-60	64	64.6	21	21.2	10	10.2	1	1.0	3	3.0	
	>60	10	43.5	10	43.5	2	8.7	1	4.3	0	0.0	
My family members help me financially to get my medications when I need	15-30	31	58.5	15	28.3	5	9.4	1	1.9	1	1.9	0.31
	31-45	57	45.6	36	28.8	12	9.6	12	9.6	8	6.4	
	46-60	46	46.5	38	38.4	7	7.1	5	5.0	3	3.0	
	>60	11	47.8	9	39.1	3	13.1	0	0.0	0	0.0	
My family members help me in reaching the mental health clinic if I'm tiered or sick	15-30	32	60.4	15	28.3	5	9.4	0	0.0	1	1.9	0.71
	31-45	73	58.4	34	27.2	11	8.8	2	1.6	5	4.0	
	46-60	57	57.6	25	25.4	12	12.1	4	4.0	1	1.0	
	>60	12	52.2	9	39.2	1	4.3	1	4.3	0	0.0	
My family members help me in dealing with the side effects of my medications	15-30	25	47.2	20	37.7	5	9.4	0	0.0	3	5.7	0.76
	31-45	68	54.4	36	28.8	12	9.6	3	2.4	6	4.8	
	46-60	45	45.6	35	35.4	12	12.1	4	4.0	2	2.0	
	>60	13	56.6	9	39.1	1	4.3	0	0.0	0	0.0	
My family members encourage me to be compliant with my medication and treatment plan	15-30	39	24.5	9	17.1	4	7.5	0	0.0	1	1.9	0.97
	31-45	96	76.8	19	15.2	8	6.4	1	0.8	1	0.8	
	46-60	80	80.9	13	13.1	4	4.0	0	0.0	2	2.0	
	>60	17	73.9	4	17.4	2	8.7	0	0.0	0	0.0	

5.5.3 Cross tabulation between the participants' responses to the questionnaire items and their place of residency

Only six questions (q1, q6, q7, q8, q13, q14) related to the participants' knowledge had statistically significant relationship with the place of residency questions, (see table 5.20). For example, 78.8% (n=134) of the village residents versus 76.8% (n=99) of the city residents reported that they "always or often" considered themselves in good health, whereas, 15.3% (n=26) of village residents versus 14% (n=18) of city residents responded "sometimes" (p=.02).

Also, 88.2% (n=150) of village residents versus 82.2% (n=106) of city residents indicated that decreasing tension and anger "always or often" helped to control their psychological problem, and 8.2% (n=14) of village residents versus 13.9% (n=18) of city residents reported it as "sometimes" (p=.00). For the importance of physical activity in reducing tension, 13.5% (n=23) of village residents versus 28.7% (n=37) of city residents said that physical activity "rarely or never" helped them to reduce their tension (p=.00).

Moreover, 88.7% of the village residents versus 85% of the city residents reported that they "always or often" thought that it was necessary for them to take their medication, whereas, 7.6% of village residents versus 9.3% of city residents responded as "sometimes" (p=.005). Also, 51.2% (n=87) of the village residents versus 39% (n=49) of the city residents reported that they "always or often" thought that mental illness could be prevented, and 30.5% (n=52) of village residents versus 31.7% (n=41) of city residents responded as "sometimes" (p=.05).

9In addition, 76.3% (n=129) of the village residents versus 72.8% (n=94) of the city residents stated that they "rarely or never" thought that people around them treated them in a bad way because of their psychological problem and so it decreased their desire to take their medications, whereas 31.6% (n=23) of village residents versus 13.8% (n=17) of city residents responded as "sometimes" (p=.00).

Table (5.20): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
In general I consider myself in good health	Village	60	35.3	74	43.5	26	15.3	7	4.12	3	1.8	0.02
	City	25	19.4	74	57.4	18	13.9	10	7.7	2	1.6	
	camp	0	0.0	1	100	0	0.0	0	0.0	0	0.0	
My psychological problem is well controlled	Village	81	47.6	61	35.9	21	12.3	4	2.3	3	1.8	0.14
	City	47	36.4	54	41.9	15	11.6	7	5.4	6	4.7	
	camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I consider my psychological problem as a serious problem that needs treatment	Village	121	71.2	27	15.9	12	7.1	4	2.3	6	3.5	0.27
	City	77	59.7	28	21.7	10	7.75	6	4.6	8	6.2	
	camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I think that my psychological problem has hereditary basis	Village	15	8.8	10	5.9	10	5.9	14	8.2	121	71.2	0.05
	City	2	1.6	11	8.5	11	8.5	7	5.4	98	76.0	
	camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I think that being male or female will affect the risk of having a mental disorder	Village	9	5.3	20	11.8	36	21.2	54	31.8	51	30.0	0.10
	City	3	2.3	11	8.5	17	13.2	46	35.7	52	40.3	
	camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I think that decreasing tension or anger will help me in controlling my psychological problem(s)	Village	82	48.2	68	40.0	14	8.2	4	2.3	2	1.2	0.00
	City	34	26.4	72	55.8	18	13.9	3	2.3	2	1.6	
	camp	0	0.0	1	100	0	0.0	0	0.0	0	0.0	
I think that physical activities will help me in reducing my tension	Village	76	44.7	43	25.3	28	16.5	17	10.0	6	3.5	0.00
	City	32	24.8	39	30.2	21	16.3	28	21.7	9	7.0	
	camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I take my medication for the treatment and the alleviation of my mental problem.	Village	116	68.6	34	20.1	13	7.7	3	1.8	3	1.8	0.00
	City	61	47.3	49	38.0	12	9.3	4	3.1	3	2.3	
	camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I think that my medication(s) help me to control my psychological problem(s)	Village	114	67.5	36	21.3	12	7.1	3	1.8	4	2.4	0.09
	City	68	52.7	39	30.2	16	12.4	4	3.1	2	1.6	
	camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	

Table (5.20): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I feel it is not necessary to take my medication	Village	14	8.2	12	7.1	18	10.6	27	15.9	99	58.2	0.32
	City	11	8.5	14	10.9	22	17.0	18	13.9	64	49.6	
	camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I think it's safe for me to reduce or increase the dosage without consulting my doctor	Village	7	4.1	15	8.9	13	7.7	22	13.0	112	66.3	0.13
	City	3	2.3	10	7.8	17	13.2	27	20.9	72	55.8	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I think that my medications have serious side effects that may affect my health	Village	6	3.5	12	7.1	24	14.1	38	22.3	90	52.9	0.62
	City	4	3.1	9	7.0	23	17.8	20	15.5	73	56.6	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I think mental illness can be prevented	Village	24	14.1	63	37.1	52	30.6	20	11.8	11	6.5	0.05
	City	8	6.2	41	31.8	41	31.8	26	20.1	13	10.1	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The people around me treat me in a bad way because of my psychological problem and so it decreases my desire to take my medication(s)	Village	1	0.6	16	9.5	23	13.6	31	18.3	98	58.0	0.00
	City	4	3.1	14	10.9	17	13.2	45	34.9	49	38.0	
	Camp	0	0	0	0	0	0.0	0	0.0	1	100	
The stigma of my psychological problem decreases my desire to take my medication(s)	Village	4	2.4	11	6.5	31	18.2	47	27.6	77	45.3	0.10
	City	4	3.1	5	3.9	32	24.8	47	36.4	41	31.8	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	
Going to a mental health centers or clinics reduce my desire to take my medicines regularly	Village	1	0.6	11	6.5	27	15.9	36	21.2	95	55.9	0.21
	City	6	4.7	6	4.7	19	14.7	25	19.4	73	56.6	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	

Further, cross tabulation between the place of residency and the duration of illness related items showed no statistically significance relationship (see table 5.12 appendix D).

Moreover, only question one showed statistically significant relationship between the place of residency and the drugs daily regimen related items (see table 5.21). For example 74.7% (n=127) of village residence versus 62.8% (n=81) of city residence said "rarely or never"

because they had to take their medications many times a day, it decreased their desire to take their medication every day, while 13.5 (n=23) of village residence versus 19.4 (n=25) of city residence responded "sometimes" (p=0.05).

Table (5.21): Cross-tabulation of the participants' responses to the questions related to treatment schedule by place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
Because I have to take my drug(s) many times a day, it decreases my desire to take them every day	Village	1	0.6	19	11.2	23	13.5	49	28.8	78	45.9	0.05
	City	6	4.7	17	13.2	25	19.4	37	28.7	44	34.1	
	Camp	0	0.0	1	100.	0	0.0	0	0.0	0	0.0	
Because I have to take my drug(s) many times a day, it is difficult for me to remember this all the time	Village	3	1.8	12	7.1	31	18.2	52	30.6	72	42.4	0.89
	City	3	2.3	11	8.5	23	17.8	44	34.1	48	37.2	
	Camp	0	0.0	0	0.0	0	0.0	1	100	0	0.0	
Changing my drugs-regimen by my doctors frequently decreases my desire to take these drugs	Village	5	2.9	16	9.4	24	14.1	46	27.1	79	46.5	0.81
	City	3	2.3	17	13.2	15	11.6	32	24.8	62	48.1	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The drugs I take for my other chronic conditions decreases my desire to take my anti-psychotic medication	Village	1	0.6	1	0.6	5	3.0	4	2.4	159	93.5	0.48
	City	1	0.8	7	5.4	3	2.3	5	3.9	113	87.6	
	Camp	0	0.0	0	0.0	0	0.0	1	100	0	0.0	

Further, five questions (q3, q4, q5, q7, q10) were statistically significant when cross tabulation was done between the place of residency and their relationship with the doctor (see table 5.22). For example, 93.5% (n=159) of village residents versus 91.4% (n=118) of city residents said that they "always or often" satisfied with the medical care they received in the clinic, while 5.3% (n=9) of village residents versus 5.4% (n=7) of city residents responded "sometimes" (p=.00).

Also, 6% (n=10) of village residents versus 8.5% (n=11) of city residents reported that the treating doctor "always or often" made them feel foolish while 7.1% (n=12) of village residents versus 16.3% (n=21) of city residents responded "sometimes" (p=.01).

Table (5.22): Cross-tabulation of the participants' responses to the questions related to patient-doctor relationship by place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The same Doctor sees me in every visit I go to the clinic	Village	34	20.0	68	40.0	62	36.5	6	3.5	0	0.0	0.17
	City	17	13.2	58	45.0	46	35.7	5	3.9	3	2.3	
	Camp	1	100	0	0.0	0	0.0	0	0.00	0	0.0	
The doctor treats me with respect when I visit him in the clinic	Village	155	91.2	11	6.5	3	1.8	1	0.6	0	0.0	0.35
	City	111	86.0	14	10.9	4	3.1	0	0.0	0	0.0	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I'm satisfied with the medical care I receive in the clinic	Village	125	73.5	34	20.0	9	5.3	1	0.6	1	0.6	0.00
	City	67	51.9	51	39.5	7	5.4	3	2.3	1	0.8	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The doctor allow me to say anything I think it's important for my health during the visit	Village	112	65.9	41	24.1	11	6.5	6	3.5	0	0.0	0.00
	City	71	55.0	34	26.4	14	10.9	7	5.4	3	2.3	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The Doctor makes me feel foolish sometimes during the visit	Village	3	1.8	7	4.2	12	7.1	48	28.6	98	58.3	0.01
	City	4	3.1	7	5.4	21	16.3	46	35.7	51	39.5	
	Camp	0	0.0	1	100	0	0.0	0	0.0	0	0.0	
The Doctor acts too serious/formal and impersonal towards me	Village	112	66.3	47	27.8	7	4.1	2	1.2	1	0.6	0.07
	City	65	50.4	51	39.5	8	6.2	2	1.5	3	2.3	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The doctor during the examination or visit hurry too much to finish it quickly	Village	6	3.5	13	7.6	25	14.7	42	24.7	84	49.4	0.01
	City	6	4.7	14	10.9	37	28.7	30	23.3	42	32.6	
	Camp	0	0.0	1	100	0	0.0	0	0.0	0	0.0	
The Doctor sometimes ignores what I tell him/her concerning my psychological problem	Village	3	1.8	11	6.5	13	7.6	45	26.5	98	57.6	0.33
	City	3	2.3	11	8.6	18	14.1	34	26.6	62	48.4	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	

Table (5.22): Cross-tabulation of the participants' responses to the questions related to patient-doctor relationship by place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor listen carefully to what I have to tell him/her	Village	117	68.8	42	24.7	7	4.12	2	1.2	2	1.2	0.05
	City	71	55.0	39	30.2	15	11.6	3	2.3	1	0.8	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
My doctor spends enough time with me during the visit	Village	118	69.4	29	17.1	19	11.2	1	0.6	3	1.8	0.13
	City	71	55.0	34	26.4	18	13.9	2	1.5	4	3.1	
	Camp	0	0.0	1	100	0	0.0	0	0.0	0	0.0	
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	Village	135	79.4	30	17.6	4	2.3	1	0.6	0	0.0	0.58
	City	96	74.4	25	19.4	6	4.6	1	0.8	1	0.8	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
When I visit the clinic, I wait long time in the waiting room before I can see the doctor	Village	7	4.1	16	9.4	50	29.4	60	35.3	37	21.8	0.97
	City	7	5.4	11	8.5	38	29.5	43	33.3	30	23.3	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	

Regarding the clarity of drugs usage instructions, the findings revealed significant relationship between the place of residency and two questions (q1 and q2) (see table 5.23). For example, 97% (n=165) of village residents versus 93.8% (n=121) of city residents reported that the drug use instructions written by the doctor are "always or often" clear to them, while 2.4 %(n=5) of village residents versus 6.2% (n=8) of city residents responded "sometimes" (p=.00). Also, 88.9%(n=151) of village residents versus 89.2% (n=115) of city residents indicated that the medical staff "always or often" explained and gave them clear information about the importance of controlling their psychological problem while 3% (n=5) of village residents versus 3.9% (n=5) of city residents responded "rarely or never" (p=.00).

Table (5.23): Cross-tabulation between the participants' responses to the questions related to clarity of treatment and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The drug- use instructions written by the doctor are clear to me	Village	99	58.2	66	38.8	5	2.9	0	0.0	0	0.0	0.00
	City	52	40.3	69	53.5	8	6.2	0	0.0	0	0.0	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The medical staff (nurse/doctor) explain to me and give me accurate information about the importance of controlling my psychological symptoms	Village	131	77.1	20	11.8	14	8.2	2	1.2	3	1.8	0.00
	City	77	59.7	38	29.5	9	7.0	3	2.3	2	1.6	
	Camp	0	0.0	0	0.0	0	0.00	0	0.0	1	100	
The medical staff (nurse/doctor) use clear and simple language when they give me instructions about my psychological problem and ways to control it	Village	128	75.3	27	15.9	10	5.9	3	1.8	2	1.2	0.18
	City	82	63.6	31	24.0	12	9.3	1	0.8	3	2.3	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
My doctor explains me the reason for performing a medical tests he recommend	Village	23	13.5	44	25.9	38	22.4	33	19.4	32	18.8	0.37
	City	13	10.1	31	24.0	33	25.6	29	22.5	23	17.8	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
When my doctor changes my drugs, he explains to me the reason for that	Village	27	16.0	47	27.8	37	21.9	28	16.6	30	17.8	0.63
	City	13	10.2	34	26.6	30	23.4	25	19.5	26	20.3	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
The doctor uses difficult medical terms without explaining what they mean	Village	11	6.5	17	10.0	18	10.6	41	24.1	83	48.8	0.07
	City	7	5.4	19	14.7	26	20.1	30	23.3	47	36.4	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
The doctor gives me advices and information about different ways to avoid relapses	Village	85	50.0	45	26.5	21	12.3	9	5.3	10	5.9	0.61
	City	63	48.8	33	25.6	13	10.1	13	10.1	7	5.4	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	

Cross tabulation between family support related questions and the place of residency showed significant relationship with three questions only (q3, q4, q5) (see table 5.24). For example, 85.9% (n=146) of village residents versus 74.4% (n=96) of city residents reported that their families “always or often” helped them financially to get their medications and 7% (n=12) of village residents versus 11.6% (n=15) of city residents responded “sometimes” (p=.01). Moreover, 89.3% (n=151) of village residents versus 77.5% (n=100) of city residents said that their family members “always or often” helped them in dealing with the side effects of their medications, while 3.6% (n=6) of village residents versus 6.3% (n=8) of city residents responded “rarely or never” (p=.00).

Furthermore, 86.5% (n=147) of village residents versus 84.5% (n=109) of city residents said that their families “always or often” helped them to reach the medical facility (clinic or hospital) when they were tired or sick and 10% (n=17) of village residents versus 9.3% (n=12) of city residents responded as “sometimes” (p=.00).

Table (5.24): Cross-tabulation between the participants’ responses to the questions related to family support and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members remind me about my medications	Village	95	55.9	61	35.9	11	6.5	1	0.6	2	1.2	0.08
	City	55	42.6	53	41.1	15	11.6	4	3.1	2	1.6	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
My family members help me in taking my medications	Village	119	70.0	30	17.6	12	7.1	3	1.8	6	3.5	0.24
	City	75	58.1	32	24.8	13	10.0	5	3.9	4	3.1	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
My family members help me financially to get my medications when I need	Village	87	51.2	59	34.7	12	7.0	4	2.3	8	4.7	0.01
	City	57	44.2	39	30.2	15	11.6	14	10.8	4	3.1	
	Camp	1	100.	0	0.0	0	0.0	0	0.0	0	0.0	
My family members help me in reaching the mental health clinic if I’m tiered or sick	Village	112	65.9	35	20.6	17	10.0	2	1.2	4	2.4	.00
	City	61	47.3	48	37.2	12	9.3	5	4.0	3	2.3	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	

Table (5.24): Cross-tabulation between the participants' responses to the questions related to family support and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members help me in dealing with the side effects of my medications	Village	96	56.8	55	32.5	10	5.9	1	0.6	7	4.1	0.00
	City	55	42.6	45	34.9	20	15.5	5	3.9	4	3.1	
	Camp	0	0.0	0	0.0	0	0.0	1	100	0	0.0	
My family members encourage me to be compliant with my medication and treatment plan	Village	137	80.6	20	12.0	10	6.0	1	0.6	2	1.2	0.37
	City	94	72.9	25	19.4	8	6.2	0	0.0	2	1.6	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	

For the questions related to participants' regularity on their doctor appointments, cross tabulation showed statistically significant relationship for two questions only (q3 and q7) (see table 5.25). For example, 11.9% (n=20) of village residents versus 13.2% (n=17) of city residents stated that they "always or often" forgot to take their medication because of their busy life while 74.6% (n=126) of village residents versus 70.5% (n=91) of city residents answered "rarely or never" (p=.04).

Also, 17.1% (n=29) of village residents versus 17.8% (n=23) of city residents stated that they "always or often" reduced or increased medications without consulting their doctor while 71.1% (n=121) of village residents versus 58.2% (n=75) of city residents answered "rarely or never" (p=.01).

Table (5.25): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow up and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		Never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I'm always regular at my doctor's appointment	Village	110	64.7	43	25.3	10	5.9	3	1.8	4	2.4	0.70
	City	91	70.5	26	20.2	6	4.7	4	3.1	2	1.6	
	Camp	1	100	0	0.0	0	0.0	0	0.0	0	0.0	
I take my drugs in a regular basis, as described by my doctor	Village	125	73.5	31	18.2	7	4.1	4	2.4	3	1.8	0.36
	City	83	64.3	35	27.1	5	3.9	2	1.6	4	3.1	
	Camp	1	100	0	0.0	0	0.00	0	0.00	0	0.0	
I forget to take my drugs because of being busy in other things in life	Village	3	1.8	17	10.1	23	13.6	26	15.4	100	59.2	0.04
	City	4	3.1	13	10.1	21	16.2	36	27.9	55	42.6	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	
When I feel better, I stop taking my medication(s)	Village	5	2.9	21	12.4	28	16.5	17	10.0	99	58.2	0.60
	City	6	4.7	22	17.1	24	18.6	12	9.3	65	50.4	
	Camp	0	0.0	0	0.0	0	0.00	0	0.0	1	100	
If I feel worse because of the side effects of my medicine(such as Insomnia, headache, cramping), I stop taking it without consulting my doctor	Village	6	3.5	12	7.1	9	5.3	28	16.5	115	67.6	0.38
	City	3	2.3	12	9.3	14	10.9	21	16.3	79	61.2	
	Camp	0	0.0	0	0.0	0	0.00	0	0.00	1	100	
I always visit my doctor personally for follow-up and drug prescription	Village	101	59.4	38	22.4	19	11.2	7	4.1	5	2.9	0.79
	City	70	54.3	37	28.7	14	10.9	4	3.1	4	3.1	
	Camp	1	100	0	0.0	0	0.00	0	0.00	0	0.0	
I reduce or increase my medication(s) without consulting my doctor	Village	8	4.7	21	12.4	20	11.8	22	12.9	99	58.2	0.01
	City	3	2.3	20	15.5	31	24.0	21	16.3	54	41.9	
	Camp	0	0.0	0	0.0	0	0.0	0	0.00	0	0.0	
I feel that there is no need to take my medicine because I don't have a problem requiring medication	Village	9	5.3	12	7.1	25	14.7	17	10.0	107	62.9	0.20
	City	8	6.2	15	11.6	27	20.9	15	11.6	64	49.6	
	Camp	0	0.0	0	0.0	0	0.0	0	0.00	1	100	

Finally, cross tabulation between participants' responses to the questions related to the cost of treatment and place of residency revealed statistically significant relationship for three equations (q1, q2, q3) (see table 5.26). For example, 30.6% (n=52) of village residents versus 15.6% (n=20) of city residents stated that they "always or often" had to pay for the medical care more than what they could afford and 11.2% (n=19) of village residents versus 20.9% (n=27) of city residents stated it as "sometimes" (p=.00).

Also, 31.2% (n=53) of village residents versus 17.8% (n=23) of city residents claimed that they "always or often" had a problem to cover their share of the cost for the medical care they received in the clinic, while 45.3% (n=77) of village residents versus 58.2% (n=75) of city residents reported it as "rarely or never" (p=.00). Further 30.5% (n=52) of village residents versus 18.6% (n=24) of city residents stated that they "always or often" had worries about having to pay large medical bills, whereas, 17.1% (n=29) of village residents versus 27.9% (n=36) of city residents responded it as "sometimes" (p=.02).

Table (5.26): Cross-tabulation between the participants' responses to the questions related to cost of treatment and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I have to pay for my medical care more than what I can afford	Village	16	9.4	36	21.2	19	11.18	34	20.0	65	38.2	0.00
	City	10	7.8	10	7.8	27	20.9	36	27.9	46	35.7	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	
I have financial problems to cover my medical needs	Village	21	12.4	32	18.8	40	23.5	24	14.1	53	31.2	0.00
	City	8	6.2	15	11.6	31	24.0	41	31.8	34	26.4	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	
I have worries about having to pay large medical bills	Village	22	12.9	30	17.6	29	17.1	30	17.6	59	34.7	0.02
	City	5	3.9	19	14.7	36	27.9	32	24.8	37	28.7	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	
I think that the amount I have to pay to cover my treatment expenses are reasonable	Village	37	21.8	17	10.0	38	22.4	29	17.1	49	28.8	0.56
	City	26	20.2	21	16.3	27	20.9	26	20.2	29	22.5	
	Camp	0	0.0	0	0.0	0	0.0	0	0.0	1	100	

Table (5.26): Cross-tabulation between the participants' responses to the questions related to cost of treatment and place of residence.

Variable	Place of Residence	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
High cost of my medication and treatment plan make me Less committed	Village	7	4.1	28	16.6	30	17.8	27	16.0	77	45.6	0.39
	City	5	3.9	19	14.7	32	24.8	26	20.2	47	36.4	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	
Cheap transportation costs to the mental health clinics makes me more committed to seek treatment and visit the doctor	Village	141	83.4	14	8.3	8	4.73	0	0.0	6	3.6	0.57
	City	104	80.6	11	8.5	6	4.7	2	1.6	6	4.7	
	Camp	0	0.0	0	0.0	1	100	0	0.0	0	0.0	

5.5.4. Cross tabulation between participants' responses to the questionnaire items and their marital status

The findings revealed no statistically significant relationship between marital status and the questions related to the participants' knowledge and perception of their illness (see table 5.13, appendix D), duration of illness (see table 5.14, appendix D), participants' drugs' regimen (see table 5.15, appendix D), drugs usage instruction (see table 5.16, appendix D), participants' family support (see table 5.17, appendix D), and questions related to the cost of treatment (see table 5.18, appendix D).

Further, no statistically significant differences were observed between participants' responses to the questions related to their relationship with the doctor and their marital status except one question (q9). For example, 53.9% (n=42) of the single participants, 46.6% (n=84) of the married participants and 45.4% (n=15) of the divorced participants versus 50% (n=5) of the widowed participants indicated that if they had a medical question, they "always or often" could reach the doctor without any problem (p=.01) (see table 5.27).

Table (5.27): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and marital status.

Variable	Marital Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The same Doctor sees me in every visit I go to the clinic	Single	13	16.6	32	41.0	30	38.5	2	2.6	1	1.3	0.96
	Married	27	15.1	80	44.7	63	35.2	7	3.9	2	1.1	
	Divorced	10	30.3	11	33.3	11	33.3	1	3.0	0	0.0	
	Widowed	2	20.0	3	30.0	4	40.0	1	10	0	0.0	
The doctor treats me with respect when I visit him in the clinic	Single	69	88.5	6	7.7	3	3.8	0	0.0	0	0.0	0.99
	Married	159	89	16	8.9	3	1.6	1	0.5	0	0.0	
	Divorced	30	90.9	2	6	1	0.0	0	0.0	0	0.0	
	Widowed	9	90	1	10	0	0.0	0	0.0	0	0.0	
I'm satisfied with the medical care I receive in the clinic	Single	48	61.5	18	23.1	10	12.8	1	1.3	1	1.3	0.07
	Married	115	64.2	57	31.8	3	1.68	3	1.7	1	0.6	
	Divorced	26	78.8	5	15.2	2	6.06	0	0.0	0	0.0	
	Widowed	4	40.0	5	50.0	1	10	0	0.0	0	0.0	
The doctor allow me to say anything I think it's important for my health during the visit	Single	46	58.6	19	24.4	8	10.6	5	6.4	0	0.0	0.98
	Married	113	63.1	44	24.6	13	7.3	6	3.3	3	1.7	
	Divorced	20	60.6	9	27.3	3	9.2	1	3.0	0	0.0	
	Widowed	5	50.0	3	30.0	1	10.0	1	10	0	0.0	
The Doctor makes me feel foolish sometimes during the visit	Single	3	3.9	5	6.5	8	10.39	24	31.2	37	48.1	0.94
	Married	3	1.7	7	3.9	22	12.3	56	31.3	91	50.8	
	Divorced	1	3.1	3	9.4	2	6.3	9	28.1	17	53.1	
	Widowed	0	0.0	0	0.0	1	10.0	5	50.0	4	40.0	
The Doctor acts too serious/formal and impersonal towards me	Single	41	52.4	29	37.2	3	3.9	2	2.6	3	3.9	0.21
	Married	114	63.7	54	30.2	10	5.6	1	0.6	0	0.0	
	Divorced	19	57.6	11	33.3	2	6.0	1	3.0	0	0.0	
	Widowed	5	50.0	4	40.0	0	0.0	0	0.0	1	10.0	
The doctor during the examination or visit hurry too much to finish it quickly	Single	6	7.7	6	7.7	12	15.4	19	24.4	35	44.8	0.51
	Married	3	1.7	15	8.4	43	24.02	42	23.5	76	42.5	
	Divorced	3	9.1	6	18.2	5	15.15	7	21.2	12	36.4	
	Widowed	0	0.0	1	10.0	2	20.0	4	40.0	3	30.0	

Table (5.27): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and marital status.

Variable	Marital Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor sometimes ignores what I tell him/her concerning my psychological problem	Single	4	5.1	5	6.4	6	7.7	23	29.5	40	51.3	0.86
	Married	1	0.6	14	7.8	20	11.17	43	24.0	101	56.4	
	Divorced	1	3.0	2	6.1	4	12.1	10	30.3	16	48.5	
	Widowed	0	0.0	1	11.1	1	11.1	3	33.3	4	44.4	
If I have a medical question, I can reach the doctor for help without any problem	Single	7	9.0	35	44.9	18	23.1	14	17.9	4	5.1	0.01
	Married	17	9.5	67	37.4	65	36.3	21	11.7	9	5.0	
	Divorced	1	3.0	14	42.4	11	33.3	5	15.2	2	6.1	
	Widowed	0	0.0	5	50.0	1	10.0	1	10.0	3	30.0	
The doctor listen carefully to what I have to tell him/her	Single	48	61.5	19	24.4	7	9.	3	3.8	1	1.3	0.65
	Married	116	64.8	51	28.5	8	4.47	2	1.12	2	1.1	
	Divorced	19	57.6	8	24.2	6	18.2	0	0.0	0	0.0	
	Widowed	6	60.0	3	30.0	1	10.0	0	0.0	0	0.0	
My doctor spends enough time with me during the visit	Single	42	53.8	20	25.6	12	15.4	1	1.3	3	3.9	0.73
	Married	123	68.7	32	17.9	18	10.1	2	1.1	4	2.2	
	Divorced	20	60.6	8	24.2	5	15.1	0	0.0	0	0.0	
	Widowed	4	40.0	4	40.0	2	20.0	0	0.0	0	0.0	
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	Single	61	78.2	12	15.4	5	6.4	0	0.00	0	0.0	0.87
	Married	141	78.8	31	17.3	4	2.2	2	1.12	1	0.6	
	Divorced	24	72.7	8	24.2	1	3.0	0	0.0	0	0.0	
	Widowed	6	60.0	4	40.0	0	0.0	0	0.0	0	0.0	
When I visit the clinic, I wait long time in the waiting room before I can see the doctor	Single	2	2.5	8	10.2	30	38.5	25	32.1	13	16.7	0.74
	Married	9	5.0	17	9.5	47	26.3	63	35.2	43	24.0	
	Divorced	3	9.1	2	6.1	9	27.3	10	30.3	9	27.3	
	Widowed	0	0.0	0	0.0	3	30.0	5	50.0	2	20.0	

Regarding the participants' regularity on doctor appointments and the treatment plan, only two questions (q1,q7) out of eight questions had statistically significant relationship with marital status (see table 5.28). For example, 92.3% (n=72) of the single participants and 92.8% (n=166) of the married participants versus 84.9% (n=28) of the divorced participants,

90% (n=9) of the widowed participant reported that they “always or often” regular at their doctor appointments (p=.00).

Furthermore, 16.7% (n=14) of the single participants and 17.3% (n=31) of the married participants versus 18.8% (n=6) of the divorced participants and 20% (n=2) of the widowed participants reported that they “always or often” reduced or increased their medications without consulting their doctor whereas 66.6% (n=52) of the single participants and 64.2% (n=115) of the married participants versus 68.7% (n=22) of the divorced participants, 70% (n=7) of the widowed participants stated it as “rarely or never” (p=.00).

Table (5.28): Cross-tabulation between the participants’ responses to the questions related to regularity and treatment follow up and marital status.

Variable	Marital Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I’m always regular at my doctor’s appointments	Single	57	73.1	15	19.2	3	3.8	2	2.6	1	1.3	0.00
	Married	122	68.2	44	24.6	7	3.9	3	1.7	3	1.7	
	Divorced	22	66.7	6	18.2	2	6.0	1	3.0	2	6.1	
	Widowed	8	80.0	1	10.0	0	0.0	0	0.0	1	10	
I take my drugs in a regular basis, as described by my doctor	Single	57	73.1	15	19.2	3	3.8	2	2.6	1	1.3	0.90
	Married	122	68.2	44	24.6	7	3.9	3	1.7	3	1.7	
	Divorced	22	66.7	6	18.2	2	6.0	1	3.0	2	6.1	
	Widowed	8	80.0	1	10.0	0	0.0	0	0.0	1	10	
I forget to take my drugs because of being busy in other things in life	Single	2	2.6	9	11.5	11	14.2	20	25.6	36	46.1	0.61
	Married	4	2.2	13	7.3	29	16.3	31	17.4	101	56.7	
	Divorced	1	3.0	5	15.2	4	12.1	9	27.3	14	42.4	
	Widowed	0	0.0	3	30.0	1	10.0	2	20.0	4	40.0	
When I feel better, I stop taking my medication(s)	Single	4	5.1	12	15.4	16	20.5	9	11.5	37	47.4	0.14
	Married	2	1.1	29	16.2	26	14.5	18	10.0	104	58.1	
	Divorced	4	12.1	1	3.0	7	21.2	1	3.0	20	60.6	
	Widowed	1	10.0	1	10.0	3	30.0	1	10.0	4	40.0	

Table (5.28): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow up and marital status.

Variable	Marital Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	F.	%	F.	%	F.	
I reduce or increase my medication(s) without consulting my doctor	Single	2	2.6	11	14.1	13	16.7	20	25.6	32	41.0	0.00
	Married	5	2.8	26	14.5	33	18.4	16	8.9	99	55.3	
	Divorced	4	12.5	2	6.3	4	12.5	2	6.2	20	62.5	
	Widowed	0	0.0	2	20.0	1	10.0	5	50.0	2	20.0	
I feel that there is no need to take my medicine because I don't have a problem requiring medication	Single	8	10.4	9	11.5	14	17.9	9	11.5	38	48.7	0.58
	Married	5	2.8	13	7.3	33	18.4	19	10.6	109	60.9	
	Divorced	3	9.1	4	12.1	3	9.1	2	6.0	21	63.6	
	Widowed	1	10.0	1	10.0	2	20.0	2	20.0	4	40.0	
If I feel worse because of the side effects of my medicine(such as Insomnia, headache, cramping), I stop taking it without consulting my doctor	Single	3	3.8	5	6.5	6	7.7	16	20.5	48	61.5	0.83
	Married	4	2.2	14	7.8	16	8.9	23	12.8	122	68.2	
	Divorced	2	6.1	4	12.1	1	3.0	8	24.2	18	54.5	
	Widowed	0	0.0	1	10.0	0	0.0	2	20.0	7	70.0	
I always visit my doctor personally for follow-up and drug prescription	Single	44	56.3	19	24.5	9	11.5	0	0.0	6	7.7	0.27
	Married	104	58.1	45	25.1	21	11.7	7	3.9	2	1.1	
	Divorced	19	57.6	9	27.3	1	3.0	3	9.0	1	3.0	
	Widowed	5	50.0	2	20.0	2	20.0	1	10.0	0	0.0	

5.5.5. Cross tabulation between the participants' responses to the questionnaire items by their level of education

Only, one question (q11) out of sixteen questions related to the participants' knowledge and perception of mental problem revealed statistically significant relationship with the participants' level of education (see table 5.29). For example, 17.7% (n=14) of the participants' who got primary education and 13.2% (n=11) of those who got elementary education versus 2.1% (n=2) of those who had secondary education and 22.8% (n=8) of those who had university education reported that they "always or often" thought it was safe to reduce or increase their medications without consulting their doctor. Whereas 7.5% (n=6) of the participants who had primary education and 9.6% (n=8) of those who had elementary

education versus 14.4% (n=14) of those who got secondary education and 5.7% (n=2) of those who had university education indicated this as “sometimes” (p=.04).

Table (5.29): Cross-tabulation between the participants’ responses to the questions related to knowledge and perception of the psychological problem and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
In general I consider myself in good health	None	1	20.0	3	60.0	1	20.0	0	0.0	0	0.0	0.50
	Primary	15	19.0	40	50.6	14	17.7	8	10.1	2	2.5	
	Elementary	23	27.7	39	47.0	15	18.0	5	6.0	1	1.2	
	Secondary	31	32.0	50	51.5	10	10.3	4	4.1	2	2.1	
	University degree	15	41.7	17	47.2	4	11.1	0	0.0	0	0.0	
My psychological problem is well controlled	None	3	60.0	1	20.0	0	0.0	1	20.0	0	0.0	0.59
	Primary	30	38.0	32	40.5	9	11.3	3	3.8	5	6.3	
	Elementary	36	43.4	31	37.3	12	14.4	2	2.4	2	2.4	
	Secondary	40	41.2	39	40.2	13	13.4	4	4.1	1	1.0	
	University degree	20	55.6	12	33.3	2	5.6	1	2.8	1	2.8	
I consider my psychological problem as a serious problem that needs treatment	None	4	80.0	1	20.0	0	0.0	0	0.0	0	0.0	0.79
	Primary	47	59.5	19	24.1	4	5.0	4	5.0	5	6.3	
	Elementary	54	65.1	14	16.9	7	8.4	3	3.6	5	6.0	
	Secondary	68	70.1	17	17.5	6	6.1	2	2.0	4	4.1	
	University degree	26	72.2	4	11.1	5	13.9	1	2.8	0	0.0	
I think that my psychological problem has hereditary basis	None	0	0.0	0	0.0	1	20.0	2	40.0	2	40.0	0.09
	Primary	4	5.1	6	7.6	6	7.5	3	3.8	60	75.9	
	Elementary	3	3.6	6	7.2	3	3.6	10	12.0	61	73.5	
	Secondary	9	9.3	8	8.2	7	7.22	3	3.0	70	72.2	
	University degree	1	2.8	1	2.8	4	11.1	3	8.3	27	75.0	

Table (5.29): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that being male or female will affect the risk of having a mental disorder	None	0	0.0	0	0.0	2	40.0	2	40.0	1	20.0	0.78
	Primary	1	1.3	8	10.1	17	21.5	29	36.7	24	30.4	
	Elementary	2	2.4	10	12.0	15	18.0	23	27.7	33	39.8	
	Secondary	7	7.2	10	10.3	14	14.4	33	34.0	33	34.0	
	University degree	2	5.6	3	8.3	5	13.9	13	36.1	13	36.1	
I think that decreasing tension or anger will help me in controlling my psychological problem.	None	1	20.0	3	60.0	0	0.0	1	20.0	0	0.0	0.51
	Primary	25	31.6	43	54.4	9	11.3	1	1.2	1	1.3	
	Elementary	33	39.8	35	42.2	10	12.0	3	3.6	2	2.4	
	Secondary	42	43.3	44	45.4	8	8.2	2	2.0	1	1.0	
	University degree	15	41.7	16	44.4	5	13.9	0	0.0	0	.0	
I think that physical activities will help me in reducing my tension	None	2	40.0	0	0.0	2	40.0	1	20.0	0	0.0	0.50
	Primary	22	27.8	24	30.4	15	18.9	16	20.2	2	2.5	
	elementary	30	36.1	23	27.7	13	15.6	11	13.2	6	7.2	
	Secondary	39	40.2	22	22.7	15	15.4	15	15.4	6	6.2	
	University degree	16	44.4	13	36.1	4	11.1	2	5.6	1	2.8	
I take my medication for the treatment and the alleviation of my mental problem.	None	3	60.0	2	40.0	0	0.0	0	0.0	0	0.0	0.54
	Primary	36	46.2	30	38.5	7	8.9	2	2.5	3	3.8	
	Elementary	55	66.3	16	19.3	8	9.6	3	3.6	1	1.2	
	Secondary	59	60.8	28	28.9	7	7.2	2	2.0	1	1.0	
	University degree	25	69.4	7	19.4	3	8.3	0	0.0	1	2.8	

Table (5.29): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that my medication(s) help me to control my psychological problem(s)	None	3	60.0	1	20.0	0	0.0	1	20.0	0	0.0	0.44
	Primary	47	60.3	17	21.8	9	11.5	2	2.5	3	3.8	
	Elementary	52	62.7	22	26.5	5	6.0	3	3.6	1	1.2	
	Secondary	57	58.8	26	26.8	12	12.3	0	0.0	2	2.1	
	University degree	24	66.7	9	25.0	2	5.6	1	2.8	0	.0	
I feel it is not necessary to take my medication	None	0	0.0	1	20.0	0	0.0	1	20.0	3	60.0	0.08
	Primary	6	7.6	8	10.1	12	15.2	16	20.2	37	46.8	
	Elementary	14	16.9	7	8.4	7	8.4	7	8.4	48	57.8	
	Secondary	3	3.1	9	9.3	14	14.4	13	13.4	58	59.8	
	University degree	2	5.6	1	2.8	7	19.4	8	22.2	18	50.0	
I think it's safe for me to reduce or increase the dosage without consulting my doctor	None	0	0.0	0	0.0	0	0.0	1	20.0	4	80.0	0.04
	Primary	2	2.5	12	15.2	6	7.5	13	16.4	46	58.2	
	Elementary	6	7.2	5	6.0	8	9.6	13	15.6	51	61.4	
	Secondary	0	0.0	2	2.1	14	14.4	15	15.4	66	68.0	
	University degree	2	5.7	6	17.1	2	5.7	7	20.0	18	51.4	
I think that my medications have serious side effects that may affect my health	None	0	0.0	1	20.0	0	0.0	1	20.0	3	60.0	0.94
	Primary	3	3.8	7	8.9	13	16.4	17	21.5	39	49.4	
	Elementary	3	3.6	4	4.8	12	14.4	17	20.4	47	56.6	
	Secondary	3	3.1	5	5.2	15	15.4	15	15.4	59	60.8	
	University degree	1	2.8	4	11.1	7	19.4	8	22.2	16	44.4	
I think mental illness can be prevented	None	0	0.0	3	60.0	0	0.0	2	40.0	0	0.0	0.86
	Primary	8	10.1	25	31.6	23	29.1	16	20.2	7	8.9	
	Elementary	8	9.6	32	38.6	24	28.9	12	14.4	7	8.4	
	Secondary	12	12.4	33	34.0	33	34.0	12	12.3	7	7.2	
	University degree	5	13.9	11	30.6	13	36.1	4	11.1	3	8.3	

Table (5.29): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The people around me treat me in a bad way because of my psychological problem and so it decreases my desire to take my medication(s)	None	0	0.0	1	20.0	0	0.0	1	20.0	3	60.0	0.44
	Primary	2	2.5	5	6.3	10	12.6	28	35.4	34	43.0	
	Elementary	1	1.2	8	9.6	13	15.6	23	27.7	38	45.8	
	Secondary	2	2.1	9	9.4	13	13.5	16	16.6	56	58.3	
	University degree	0	.0	7	19.4	4	11.1	8	22.2	17	47.2	
The stigma of my psychological problem decreases my desire to take my medication(s)	None	0	0.0	0	0.0	1	20.0	3	60.0	1	20.0	0.07
	Primary	5	6.3	4	5.1	19	24.0	28	35.4	23	29.1	
	Elementary	1	1.2	6	7.2	14	16.8	24	28.9	38	45.8	
	Secondary	1	1.0	2	2.1	26	26.8	32	32.9	36	37.1	
	University degree	1	2.8	4	11.1	4	11.1	7	19.4	20	55.6	
Going to a mental health centers or clinics reduce my desire to take my medicines regularly	None	0	0.0	0	0.0	2	40.0	0	0.0	3	60.0	0.15
	Primary	3	3.8	4	5.1	15	18.9	17	21.5	40	50.6	
	Elementary	1	1.2	8	9.6	4	4.8	22	26.5	48	57.8	
	Secondary	2	2.1	4	4.1	19	19.5	19	19.5	53	54.6	
	University degree	1	2.8	1	2.8	6	16.7	3	8.3	25	69.4	

Also, cross-tabulation did not reveal statistically significant relationship between the participants' level of education and their responses to any of the questions related to the duration of illness (see table 5.19, appendix D), the questions related to their treatment schedule (see table 5.20, appendix D), the questions related to clarity of treatment instruction (see table , appendix D 5.21),the questions related to family support (see tables 5.22, appendix D), the questions related to cost of treatment (see tables 5.23, appendix D).

Also cross tabulation between the participants' responses to questions related to their relationship with their doctor and their level of education showed statistically significant relationship for only one question (q12) (see table 5.30). For example, 100% (n=5) of the non-educated participants, 97.5% (n=77) of those who had primary education and 97.6% (n=81) of those who had elementary education versus 91.8% (n=89) of those who had

secondary education and 97.2% (n=35) of those who had university education reported that the medical staff “always or often” treated them with respect during their visit (p=.03).

Table (5.30): Cross-tabulation between the participants’ responses to the questions related to patient-doctor relationship and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor treats me with respect when I visit him in the clinic	None	5	100	0	0.0	0	0.0	0	0.0	0	0.0	0.78
	Primary	66	83.5	9	11.4	3	3.8	1	1.3	0	0.0	
	Elementary	75	90.4	6	7.2	2	2.4	0	0.0	0	0.0	
	Secondary	86	88.7	9	9.3	2	2.0	0	0.0	0	0.0	
	University degree	35	97.2	1	2.8	0	0.0	0	0.0	0	0.0	
I’m satisfied with the medical care I receive in the clinic	None	3	60.0	2	40.0	0	0.00	0	0.00	0	0.0	0.74
	Primary	50	63.3	24	30.4	4	5.06	1	1.27	0	0.0	
	Elementary	55	66.3	20	24.1	4	4.82	3	3.61	1	1.2	
	Secondary	65	67.0	24	24.7	7	7.22	0	0.00	1	1.0	
	University degree	20	55.6	15	41.7	1	2.8	0	0.0	0	0.0	
The doctor allow me to say anything I think it’s important for my health during the visit	None	2	40.0	3	60.0	0	0.0	0	0.0	0	0.0	0.25
	Primary	45	57.0	22	27.8	7	8.8	4	5.0	1	1.3	
	Elementary	58	69.9	16	19.3	7	8.4	2	2.4	0	0.0	
	Secondary	59	60.8	27	27.8	6	6.2	5	5.1	0	0.0	
	University degree	20	55.6	7	19.4	5	13.9	2	5.6	2	5.6	
The Doctor makes me feel foolish sometimes during the visit	None	0	0.0	0	0.0	0	0.0	4	80.0	1	20.0	0.40
	Primary	3	3.8	4	5.1	12	15.2	27	34.1	33	41.8	
	Elementary	2	2.4	6	7.3	8	9.7	28	34.1	38	46.3	
	Secondary	2	2.1	5	5.2	10	10.4	26	27.0	53	55.2	
	University degree	0	0.0	0	0.0	3	8.3	9	25.0	24	66.7	

Table (5.30): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The Doctor acts too serious/formal and impersonal towards me	None	3	60.0	2	40.0	0	0.0	0	0.0	0	0.0	0.49
	Primary	42	53.8	30	38.5	4	5.1	0	0.0	2	2.6	
	Elementary	52	62.7	26	31.3	2	2.4	3	3.6	0	0.0	
	Secondary	63	64.9	26	26.8	6	6.2	0	0.0	2	2.1	
	University degree	18	50.0	14	38.9	3	8.3	1	2.8	0	.0	
The doctor during the examination or visit hurry too much to finish it quickly	None	0	0.0	0	0.0	2	40.0	2	40.0	1	20.0	0.16
	Primary	4	5.1	8	10.1	20	25.3	24	30.3	23	29.1	
	Elementary	4	4.8	7	8.4	22	26.5	14	16.9	36	43.4	
	Secondary	4	4.1]	12	12.4	12	12.3	22	22.7	47	48.5	
	University degree	0	.0	1	2.8	6	16.7	10	27.8	19	52.8	
The doctor listen carefully to what I have to tell him/her	None	5	100	0	0.0	0	0.0	0	0.0	0	0.0	0.85
	Primary	44	55.7	26	32.9	7	8.86	1	1.27	1	1.3	
	Elementary	53	63.9	24	28.9	5	6.02	1	1.20	0	0.0	
	Secondary	66	68.0	20	20.6	8	8.25	2	2.06	1	1.0	
	University degree	21	58.3	11	30.6	2	5.6	1	2.8	1	2.8	
The Doctor sometimes ignores what I tell him/her concerning my psychological problem	None	0	0.0	1	20.0	1	20.0	2	40.0	1	20.0	0.48
	Primary	2	2.5	8	10.1	7	8.8	26	32.9	36	45.6	
	Elementary	3	3.6	6	7.2	6	7.23	22	26.5	46	55.4	
	Secondary	1	1.0	7	7.3	11	11.5	22	22.9	55	57.3	
	University degree	0	0.0	0	0.0	6	16.7	7	19.4	23	63.9	

Table (5.30): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
If I have a medical question, I can reach the doctor for help without any problem	None	0	0.0	2	40.0	1	20.0	1	20.0	1	20.0	0.27
	Primary	4	5.4	29	39.2	25	33.9	10	13.5	6	8.1	
	Elementary	7	8.9	24	30.4	34	43.0	7	8.9	7	8.9	
	Secondary	10	11.6	41	47.7	23	26.7	11	12.8	1	1.2	
	University degree	3	9.4	16	50.0	7	21.9	3	9.4	3	9.4	
My doctor spends enough time with me during the visit	None	3	60.0	2	40.0	0	0.0	0	0.00	0	0.0	0.74
	Primary	49	62.0	17	21.5	12	15.2	1	1.27	0	0.0	
	Elementary	52	62.7	19	22.9	10	12.0	1	1.20	1	1.2	
	Secondary	61	62.9	21	21.6	11	11.3	1	1.03	3	3.1	
	University degree	24	66.7	5	13.9	4	11.1	0	.0	3	8.3	
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	None	5	100	0	0.0	0	0.0	0	0.0	0	0.0	0.03
	Primary	53	67.1	24	30.4	2	2.5	0	0.0	0	0.0	
	Elementary	66	79.5	15	18.1	2	2.4	0	0.0	0	0.0	
	Secondary	76	78.4	13	13.4	6	6.1	2	2.0	0	0.0	
	University degree	32	88.9	3	8.3	0	0.0	0	0.0	1	2.8	
When I visit the clinic, I wait long time in the waiting room before I can see the doctor	None	0	0.0	1	20.0	2	40.0	2	40.0	0	0.0	0.19
	Primary	4	5.1	6	7.6	29	36.7	30	37.8	10	12.7	
	Elementary	4	4.8	8	9.6	24	28.9	30	36.1	17	20.5	
	Secondary	2	2.1	8	8.2	29	29.9	31	31.9	27	27.8	
	University degree	4	11.1	4	11.1	5	13.9	10	27.8	13	36.1	

For the regularity on doctor's appointment and treatment plan, only one question (q6) had a statistically significant relationship with the participants' level of education (see table 5.31). For example, 80% (n=4) of the non-educated participants and 72.1% (n=77) of those who had primary education versus 85.5% (n=71) of those who had elementary education, 89.7% (n=87) of those who had secondary education and 77.7% (n=28) of those who had university education reported that they "always or often" visited their doctors personally for follow-up and drug prescription. Also, 21.5% (n=17) of the participants who had primary

education and 7.2% (n=6) of those who had elementary education versus 6.2% (n=6) of those who had secondary education and 11.1% (n=4) of those who had university education reported that as “sometimes” (p=.04).

Table (5.31): Cross-tabulation between the participants’ responses to the questions related to regularity and treatment follow up and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I’m always regular at my doctor’s appointments	None	4	80.0	0	0.0	0	0.0	0	0.0	1	20.0	0.43
	Primary	51	64.6	19	24.1	5	6.3	2	2.5	2	2.5	
	Elementary	56	67.5	18	21.7	6	7.2	2	2.4	1	1.2	
	Secondary	65	67.0	24	24.7	5	5.1	1	1.0	2	2.1	
	University degree	26	72.2	8	22.2	0	.0	2	5.6	0	.0	
I take my drugs in a regular basis, as described by my doctor	None	4	80.0	1	20.0	0	0.0	0	0.0	0	0.0	0.34
	Primary	50	63.3	19	24.1	2	2.53	5	6.3	3	3.8	
	Elementary	56	67.5	21	25.3	4	4.82	0	0.0	2	2.4	
	Secondary	71	73.2	18	18.6	6	6.19	1	1.0	1	1.0	
	University degree	28	77.8	7	19.4	0	0.0	0	0.0	1	2.8	
I forget to take my drugs because of being busy in other things in life	None	0	0.0	2	40.0	0	0.0	0	0.0	3	60.0	0.44
	Primary	2	2.6	8	10.3	15	19.2	18	23.0	35	44.9	
	Elementary	2	2.4	5	6.0	11	13.2	17	20.4	48	57.8	
	Secondary	3	3.1	10	10.3	11	11.3	23	23.7	50	51.5	
	University degree	0	.0	5	13.9	8	22.2	4	11.1	19	52.8	
When I feel better, I stop taking my medication(s)	None	0	0.0	2	40.0	0	0.0	0	0.0	3	60.0	0.14
	Primary	2	2.5	18	22.8	14	17.7	10	12.6	35	44.3	
	Elementary	5	6.0	9	10.8	14	16.8	5	6.0	50	60.2	
	Secondary	3	3.1	9	9.3	17	17.5	7	7.2	61	62.9	
	University degree	1	2.8	5	13.9	7	19.4	7	19.4	16	44.4	

Table (5.31): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow up and level of education.

Variable	Education Level	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
If I feel worse because of the side effects of my medicine(such as Insomnia, headache, cramping), I stop taking it without consulting my doctor	None	0	0.0	0	0.0	1	20.0	1	20.0	3	60.0	0.38
	Primary	1	1.3	9	11.4	9	11.3	12	15.1	48	60.8	
	Elementary	2	2.4	9	10.8	4	4.8	12	14.5	56	67.5	
	Secondary	6	6.2	3	3.1	6	6.19	15	15.4	67	69.1	
	University degree	0	.0	3	8.3	3	8.3	9	25.0	21	58.3	
I always visit my doctor personally for follow-up and drug prescription	None	2	40.0	2	40.0	0	0.0	1	20.0	0	0.0	0.04
	Primary	34	43.0	23	29.1	17	21.5	3	3.8	2	2.5	
	Elementary	48	57.8	23	27.7	6	7.2	4	4.8	2	2.4	
	Secondary	67	69.1	20	20.6	6	6.1	1	1.0	3	3.1	
	University degree	21	58.3	7	19.4	4	11.1	2	5.6	2	5.6	
I reduce or increase my medication(s) without consulting my doctor	None	0	0.0	0	0.0	1	20.0	1	20.0	3	60.0	0.57
	Primary	3	3.8	12	15.2	17	21.5	13	16.4	34	43.0	
	Elementary	6	7.2	12	14.5	9	10.8	13	15.6	43	51.8	
	Secondary	1	1.0	10	10.4	18	18.7	14	14.5	53	55.2	
	University degree	1	2.8	7	19.4	6	16.7	2	5.6	20	55.6	
I feel that there is no need to take my medicine because I don't have a problem requiring medication	None	0	0.0	1	20.0	0	0.0	0	0.0	4	80.0	0.90
	Primary	6	7.6	8	10.1	16	20.2	8	10.1	41	51.9	
	Elementary	6	7.2	5	6.0	12	14.4	10	12.0	50	60.2	
	Secondary	4	4.1	8	8.2	16	16.5	10	10.3	59	60.8	
	University degree	1	2.8	5	13.9	8	22.2	4	11.1	18	50.0	

5.5.6. Cross tabulation between the participants' responses to the questionnaire items by their work status

Only one question (q7) out of sixteen questions related to the participants' knowledge and perception of mental problem revealed statistically significant relationship with the participants' work status (see table 5.32). For example,100% (n=8) of the employed participants and 58.9% (n=132) of the unemployed participants versus 100% (n=3) of those who were retired and 73.8% (n=48) of those who belonged to other than those previously mentioned categories such as temporary workers said that physical activity "always or often" helped them to reduce their tension (p=.02).

Table (5.32): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
In general I consider myself in good health	Employed	3	37.5	4	50.0	1	12.5	0	0.0	0	0.0	0.24
	Unemployed	55	24.6	116	51.8	32	14.3	16	7.1	5	2.2	
	Retired	0	0.0	3	100.	0	0.0	0	0.0	0	0.0	
	Other	27	41.5	26	40.0	11	16.9	1	1.5	0	0.0	
My psychological problem is well controlled	Employed	8	100	0	0.0	0	0.0	0	0.0	0	0.0	0.22
	Unemployed	95	42.4	83	37.1	30	13.4	8	3.6	8	3.6	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	24	36.9	31	47.7	6	9.2	3	4.6	1	1.5	
I consider my psychological problem as a serious problem that needs treatment	Employed	6	75.0	0	0.0	2	25	0	0.0	0	0.0	0.50
	Unemployed	152	67.9	39	17.4	14	6.3	9	4.0	10	4.5	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	38	58.5	16	24.6	6	9.2	1	1.5	4	6.2	
I think that my psychological problem has hereditary basis	Employed	1	12.5	0	0.0	0	0.0	0	0.0	7	87.5	0.06
	Unemployed	15	6.7	16	7.1	10	4.5	16	7.1	16	74.6	
	Retired	0	0.0	1	33.3	0	0.0	0	0.0	2	66.7	
	Other	1	1.5	4	6.2	11	16.9	5	7.7	44	67.7	

Table (5.32): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that being male or female will affect the risk of having a mental disorder	Employed	1	12.5	1	12.5	2	25.0	0	0.0	4	50	0.59
	Unemployed	7	3.1	21	9.4	40	17.9	81	36.2	75	33.5	
	Retired	0	0.0	0	0.0	0	0.0	1	33.3	2	66.7	
	Other	4	6.2	9	13.8	11	16.9	18	27.7	23	35.4	
I think that decreasing tension or anger will help me in controlling my psychological problem(s)	Employed	5	62.5	2	25.0	1	12.5	0	0.0	0	0.0	0.78
	Unemployed	86	38.4	101	45.1	27	12.1	7	3.1	3	1.3	
	Retired	1	33.3	2	66.7	0	0.0	0	0.0	0	0.0	
	Other	24	36.9	36	55.4	4	6.2	0	0.0	1	1.5	
I think that physical activities will help me in reducing my tension	Employed	7	87.5	1	12.5	0	0.0	0	0.0	0	0.0	0.02
	Unemployed	75	33.5	57	25.4	39	17.4	40	17.9	13	5.8	
	Retired	0	0.0	3	100	0	0.0	0	0.0	0	0.0	
	Other	27	41.5	21	32.3	10	15.4	5	7.7	2	3.1	
I take my medication for the treatment and the alleviation of my mental problem.	Employed	7	87.5	1	12.5	0	0.0	0	0.0	0	0.0	0.86
	Unemployed	130	58.3	64	28.7	19	8.5	6	2.7	4	1.8	
	Retired	2	66.7	0	0.0	1	33.3	0	0.0	0	0.0	
	Other	39	60.0	18	27.7	5	7.7	1	1.5	2	3.1	
I think that my medication(s) help me to control my psychological problem(s)	Employed	7	87.5	0	0.0	1	12.5	0	0.0	0	0.0	0.46
	Unemployed	136	61.0	58	26.0	17	7.6	6	2.7	6	2.7	
	Retired	1	33.3	2	66.7	0	0.0	0	0.0	0	0.0	
	Other	39	60.0	15	23.1	10	15.4	1	1.5	0	0.0	
I feel it is not necessary to take my medication	Employed	1	12.5	0	0.0	1	12.5	1	12.5	5	62.5	0.82
	Unemployed	18	8.0	19	8.5	25	11.2	36	16.1	126	56.3	
	Retired	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	
	Other	6	9.2	7	10.8	13	20.0	8	12.3	31	47.7	

Table (5.32): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think it's safe for me to reduce or increase the dosage without consulting my doctor	Employed	0	0.0	1	12.5	1	12.5	0	0.0	6	75.0	0.17
	Unemployed	8	3.6	17	7.6	21	9.4	39	17.5	138	61.9	
	Retired	0	0.0	2	66.7	0	0.0	0	0.0	1	33.3	
	Other	2	3.1	5	7.7	8	12.3	10	15.4	40	61.5	
I think that my medications have serious side effects that may affect my health	Employed	1	12.5	0	0.0	3	37.5	1	12.5	3	37.5	0.42
	Unemployed	8	3.6	16	7.1	29	12.9	47	21.0	124	55.4	
	Retired	0	0.0	0	0.0	0	0.0	1	33.3	2	66.7	
	Other	1	1.5	5	7.7	15	23.1	9	13.8	35	53.8	
I think mental illness can be prevented	Employed	2	25.0	3	37.5	3	37.5	0	0.0	0	0.0	0.38
	Unemployed	19	8.5	78	34.8	70	31.3	39	17.4	18	8.0	
	Retired	0	0.0	1	33.3	1	33.3	0	0.0	1	33.3	
	Other	12	18.5	22	33.8	19	29.2	7	10.8	5	7.7	
The people around me treat me in a bad way because of my psychological problem and so it decreases my desire to take my medication(s)	Employed	0	0.0	2	25.0	0	0.0	0	0.0	6	75.0	0.30
	Unemployed	3	1.3	18	8.1	32	14.3	61	27.4	109	48.9	
	Retired	0	0.0	0	0.0	0	0.0	2	66.7	1	33.3	
	Other	2	3.1	10	15.4	8	12.3	13	20.0	32	49.2	
The stigma of my psychological problem decreases my desire to take my medication(s)	Employed	0	0.0	0	0.0	1	12.5	1	12.5	6	75.0	0.52
	Unemployed	6	2.7	11	4.9	49	21.9	70	31.3	88	39.3	
	Retired	0	0.0	0	0.0	0	0.0	0	0.0	3	100.	
	Other	2	3.1	5	7.7	14	21.5	23	35.4	21	32.3	
Going to a mental health centers or clinics reduce my desire to take my medicines regularly	Employed	0	0.0	0	0.0	2	25.0	1	12.5	5	62.5	0.85
	Unemployed	7	3.1	14	6.3	32	14.3	48	21.4	123	54.9	
	Retired	0	0.0	0	0.0	0	0.0	0	0.0	3	100	
	Other	0	0.0	3	4.6	12	18.5	12	18.5	38	58.5	

Moreover, cross tabulation revealed no statistically significant relationships between the participants' work status and their responses to any of the questions related to the duration of illness (see table 5.24, appendix D), treatment schedule (see table 5.25, appendix D), clarity of treatment. (See tables 5.26, appendix D), and the questions related to theirregularity and treatment follow up (see tables 5.27, appendix D).

For doctor-patient relationship, cross tabulation showed significant relationship with two questions (q4, q12). For example, 75% (n=6) of the employed participants and 87.5% (n=196) of the unemployed participants versus 100% (n=3) of those who were retired and 83.1% (n=44) of those who belonged to other than those previously mentioned categories such as temporary workers reported that the doctor "always or often" allowed them to say anything during the visit (p=.02) (see table 5.33).

Also, the majority of the employed participants (75%, n=6) and 96.5% (n=216) of the unemployed participants versus 100% (n=3) of those who were retired and 95.4% (n=62) of those who belonged to other than those previously mentioned categories such as temporary workers indicated that the doctor "always or often" treated them with respect during the visit (p=.00).

Table (5.33): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The same Doctor sees me in every visit I go to the clinic	Employed	1	12.5	6	75.0	1	12.5	0	0.0	0	0.0	0.80
	Unemployed	40	17.9	92	41.1	81	36.2	8	3.5	3	1.3	
	Retired	1	33.3	0	0.0	2	66.7	0	0.0	0	0.0	
	Other	10	15.4	28	43.1	24	36.9	3	4.6	0	0.0	
The doctor treats me with respect when I visit him in the clinic	Employed	7	87.5	1	12.5	0	0.0	0	0.0	0	0.0	0.89
	Unemployed	196	87.5	22	9.8	5	2.2	1	0.4	0	0.0	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	61	93.8	2	3.1	2	3.1	0	0.0	0	0.0	
I'm satisfied with the medical care I receive in the clinic	Employed	6	75.0	2	25.0	0	0.0	0	0.0	0	0.0	0.92
	Unemployed	146	65.2	63	28.1	12	5.3	2	0.9	1	0.4	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	38	58.5	20	30.8	4	6.1	2	3.1	1	1.5	

Table (5.33): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor allow me to say anything I think it's important for my health during the visit	Employed	6	75.0	0	0.0	1	12.5	0	0.0	1	12.5	0.02
	Unemployed	136	60.7	60	26.8	19	8.5	9	4.0	0	0.0	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	39	60.0	15	23.1	5	7.7	4	6.1	2	3.1	
The Doctor makes me feel foolish sometimes during the visit	Employed	0	0.0	1	12.5	0	0.0	0	0.0	7	87.5	0.60
	Unemployed	7	3.2	11	5.0	25	11.3	73	32.8	106	47.7	
	Retired	0	0.0	0	0.0	0	0.0	1	33.3	2	66.7	
	Other	0	0.0	3	4.6	8	12.3	20	30.8	34	52.3	
The Doctor acts too serious/formal and impersonal towards me	Employed	6	75.0	1	12.5	1	12.5	0	0.0	0	0.0	0.99
	Unemployed	134	60.1	72	32.3	11	4.9	3	1.3	3	1.3	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	36	55.4	24	36.9	3	4.6	1	1.5	1	1.5	
The doctor during the examination or visit hurry too much to finish it quickly	Employed	0	0.0	1	12.5	1	12.5	1	12.5	5	62.5	0.92
	Unemployed	10	4.5	19	8.5	50	22.3	52	23.2	93	41.5	
	Retired	0	0.0	0	0.0	0	0.0	1	33.3	2	66.7	
	Other	2	3.1	8	12.3	11	16.9	18	27.7	26	40.0	
The Doctor sometimes ignores what I tell him/her concerning my psychological problem	Employed	0	0.0	0	0.0	2	25.0	0	0.0	6	75.0	0.74
	Unemployed	5	2.2	18	8.1	22	9.9	62	27.8	116	52.0	
	Retired	0	0.0	0	0.0	0	0.0	0	0.0	3	100	
	Other	1	1.5	4	6.2	7	10.8	17	26.1	36	55.4	
If I have a medical question, I can reach the doctor for help without any problem	Employed	1	14.3	4	57.1	1	14.3	0	0.0	1	14.3	0.68
	Unemployed	16	7.7	86	41.5	71	34.3	23	11.1	11	5.3	
	Retired	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	
	Other	6	10.2	21	35.6	17	28.8	9	15.2	6	10.2	
The doctor listen carefully to what I have to tell him/her	Employed	5	62.5	3	37.5	0	0.0	0	0.0	0	0.0	0.63
	Unemployed	144	64.3	59	26.3	18	8.0	2	0.9	1	0.4	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	38	58.5	18	27.7	4	6.1	3	4.6	2	3.1	

Table (5.33): Cross-tabulation between the participants' responses to the questions related to patient-physician relationship and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My doctor spends enough time with me during the visit	Employed	7	87.5	1	12.5	0	0.0	0	0.0	0	0.0	0.16
	Unemployed	140	62.5	55	24.6	24	10.7	2	0.9	3	1.3	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	39	60.0	8	12.3	13	20.0	1	1.5	4	6.2	
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	Employed	6	75.0	0	0.0	1	12.5	0	0.0	1	12.5	0.00
	Unemployed	174	77.7	42	18.8	6	2.7	2	0.9	0	0.0	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	49	75.4	13	20.0	3	4.6	0	0.0	0	0.0	
When I visit the clinic, I wait long time in the waiting room before I can see the doctor	Employed	0	0.0	2	25.0	1	12.5	1	12.5	4	50.0	0.41
	Unemployed	13	5.8	21	9.4	66	29.5	80	35.7	44	19.6	
	Retired	0	0.0	0	0.0	1	33.3	1	33.3	1	33.3	
	Other	1	1.5	4	6.2	21	32.3	21	32.3	18	27.7	

Moreover, cross tabulation between family support related questions and the work status showed significant relationship with two questions (q1, q2) (see table 5.34) For example, 87.5% (n=5) of the employed participants and 92.4% (n=207) of the unemployed participants versus 66.6% (n=2) of those who were retired and 75.3% (n=49) of those who belonged to other than those previously mentioned categories said that that their family members "always or often" reminded them about their medications (p=.00).

Furthermore, 87.5% (n=7) of the employed versus 86.6% (n=194) of the unemployed participants versus 33.3% (n=1) of those who were retired and 84.6% (n=55) of those who belonged to other than those previously mentioned categories reported that their family members "always or often" helped them in taking their medications (p=.03).

Table (5.34): Cross-tabulation between the participants' responses to the questions related to family support and work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members remind me about my medications	Employed	4	50.0	3	37.5	1	12.5	0	0.0	0	0.0	0.00
	Unemployed	119	53.1	88	39.3	13	5.8	2	0.9	2	0.9	
	Retired	1	33.3	1	33.3	0	0.0	0	0.0	1	33.3	
	Other	27	41.5	22	33.8	12	18.4	3	4.6	1	1.5	
My family members help me in taking my medications	Employed	7	87.5	0	0.0	0	0.0	1	12.5	0	0.0	0.03
	Unemployed	146	65.2	48	21.4	19	8.5	5	2.2	6	2.7	
	Retired	1	33.3	0	0.0	1	33.3	1	33.3	0	0.0	
	Other	41	63.1	14	21.5	5	7.7	1	1.5	4	6.2	
My family members help me financially to get my medications when I need	Employed	4	50.0	1	12.5	1	12.5	0	0.0	2	25.0	0.12
	Unemployed	112	50.0	75	33.5	18	8.0	14	6.2	5	2.2	
	Retired	1	33.3	2	66.7	0	0.0	0	0.0	0	0.0	
	Other	28	43.1	20	30.8	8	12.3	4	6.1	5	7.7	
My family members help me in reaching the mental health clinic if I'm tiered or sick	Employed	6	75.0	1	12.5	0	0.0	1	12.5	0	0.0	0.74
	Unemployed	131	58.5	63	28.1	22	9.8	4	1.8	4	1.8	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	35	53.8	18	27.7	7	10.8	2	3.0	3	4.6	
My family members help me in dealing with the side effects of my medications	Employed	4	50.0	2	25.0	1	12.5	0	0.0	1	12.5	0.94
	Unemployed	117	52.2	73	32.6	20	8.9	6	2.6	8	3.6	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	28	43.8	24	37.5	9	14.0	1	1.5	2	3.1	
My family members encourage me to be compliant with my medication and treatment plan	Employed	8	100	0	0.0	0	0.0	0	0.0	0	0.0	0.97
	Unemployed	173	77.2	33	14.7	14	6.2	1	0.4	3	1.3	
	Retired	3	100	0	0.0	0	0.0	0	0.0	0	0.0	
	Other	48	73.8	12	18.5	4	6.1	0	0.0	1	1.5	

Finally, only one question (q5) related to the treatment costs revealed a statistically significant relationship with the participants' work status (see Table 5.35). For example, half of the employed participants (n=4) and 56.1% (n=125) of the unemployed participants versus 66.6% (n=2) of those who were retired and 70.8% (n=46) of those who belonged to

other than those previously mentioned categories reported that the high cost of their medication and treatment “rarely or never” made them less committed (p=.02).

Table (5.35): Cross-tabulation of the participants’ responses to the questions related to cost of treatment by work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I have to pay for my medical care more than what I can afford	Employed	1	12.5	2	25.0	2	25.0	1	12.5	2	25.0	0.47
	Unemployed	20	8.9	39	17.4	31	13.8	52	23.2	82	36.6	
	Retired	0	0.0	0	0.0	0	0.0	0	0.0	3	100	
	Other	5	7.7	5	7.7	13	20.0	17	26.1	25	38.5	
I have financial problems to cover my medical needs	Employed	1	12.5	2	25.0	3	37.5	1	12.5	1	12.5	0.42
	Unemployed	22	9.8	39	17.4	55	24.5	42	18.7	66	29.5	
	Retired	0	0.0	0	0.0	0	0.0	2	66.7	1	33.3	
	Other	6	9.2	6	9.2	14	21.5	20	30.8	19	29.2	
I have worries about having to pay large medical bills	Employed	2	25.0	3	37.5	1	12.5	1	12.5	1	12.5	0.61
	Unemployed	18	8.0	38	17.0	50	22.3	47	21.0	71	31.7	
	Retired	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	
	Other	7	10.8	8	12.3	14	21.5	14	21.5	22	33.8	
I think that the amount I have to pay to cover my treatment expenses are reasonable	Employed	5	62.5	0	0.0	0	0.0	0	0.0	3	37.5	0.08
	Unemployed	44	20.3	29	13.4	47	21.6	43	19.8	61	24.9	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	12	18.5	8	12.3	18	27.7	12	18.5	15	23.1	
High cost of my medication and treatment plan make me Less committed	Employed	2	25.0	0	0.0	2	25.0	1	12.5	3	37.5	0.02
	Unemployed	8	3.6	35	15.7	55	24.6	33	14.8	92	41.3	
	Retired	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	
	Other	2	3.1	11	16.9	6	9.2	18	27.7	28	43.1	

Table (5.35): Cross-tabulation of the participants' responses to the questions related to cost of treatment by work status.

Variable	Work Status	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
Cheap transportation costs to the mental health clinics makes me more committed to seek treatment and visit the doctor	Employed	6	75.0	1	12.5	0	0.0	0	0.0	1	12.5	0.86
	Unemployed	185	83.0	18	8.1	10	4.4	1	0.46	9	4.0	
	Retired	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	
	Other	52	80.0	5	7.7	5	7.6	1	1.54	2	3.1	

5.5.7. Cross tabulation between the participants' responses to the questionnaire items and their income status

Only two questions (q13, q15) related to the participants' knowledge were statistically significant when cross tabulation was done according to income status of the participants (see Table 5.36). For example, 44.2% (n=114) of participants with income of 1000 NIS and less and 57.7% (n=15) of those with income 1001-2000 NIS versus the same percentages of those with income 2001-3000 NIS (n=7) and those with income greater than 3000 NIS 50% (n=1) indicated that "always or often" mental illness could be prevented (p=.02).

Further, 7.4% (n=19) of participants whose income with income of 1000 NIS and less and 15.4% (n=4) of those with income 1001-2000 NIS versus 7.1% (n=1) of those with income 2001-3000 NIS reported that the stigma of their mental problems "always or often" decreased their desire to take medication (p=.030).

Table (5.36): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
In general I consider myself in good health	≤1000 NIS	66	25.6	132	51.2	38	14.7	17	6.5	5	1.9	0.40
	1001- 2000 NIS	13	50.0	8	30.8	5	19.2	0	0.0	0	0.0	
	2001- 3000 NIS	5	35.7	8	57.1	1	7.1	0	0.0	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	

Table (5.36): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My psychological problem is well controlled	≤1000 NIS	104	40.3	101	39.1	34	13.1	11	4.2	8	3.1	0.61
	1001- 2000 NIS	14	53.8	9	34.6	2	7.6	0	0.0	1	3.8	
	2001- 3000 NIS	9	64.3	5	35.7	0	0.0	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I consider my psychological problem as a serious problem that needs treatment	≤1000 NIS	169	65.5	50	19.4	17	6.5	10	3.8	12	4.7	0.93
	1001- 2000 NIS	19	73.1	3	11.5	3	11.5	0	0.0	1	3.8	
	2001- 3000 NIS	9	64.3	2	14.3	2	14.3	0	0.0	1	7.1	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I think that my psychological problem has hereditary basis	≤1000 NIS	17	6.6	19	7.4	15	5.8	19	7.3	188	72.9	0.37
	1001- 2000 NIS	0	0.0	0	0.0	5	19.2	1	3.8	20	76.9	
	2001- 3000 NIS	0	0.0	2	14.3	1	7.1	1	7.1	10	71.4	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	
I think that being male or female will affect the risk of having a mental disorder	≤1000 NIS	9	3.5	27	10.5	44	17.0	92	35.6	86	33.3	0.30
	1001- 2000 NIS	3	11.5	3	11.5	6	23.0	6	23.0	8	30.8	
	2001- 3000 NIS	0	0.0	1	7.1	3	21.4	2	14.2	8	57.1	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	
I think that decreasing tension or anger will help me in controlling my psychological problem(s)	≤1000 NIS	96	37.2	122	47.3	29	11.2	7	2.7	4	1.6	0.91
	1001- 2000 NIS	13	50.0	11	42.3	2	7.70	0	0.0	0	0.0	
	2001- 3000 NIS	7	50.0	6	42.9	1	7.1	0	0.0	0	0.0	
	>3000 NIS	0	0.0	2	100	0	0.0	0	0.0	0	0.0	

Table (5.36): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that physical activities will help me in reducing my tension	≤1000 NIS	86	33.3	71	27.5	43	16.7	45	17.4	13	5.0	0.15
	1001- 2000 NIS	15	57.7	6	23.1	3	11.5	0	0.0	2	7.7	
	2001- 3000 NIS	6	42.9	5	35.7	3	21.4	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I take my medication for the treatment and the alleviation of my mental problem.	≤1000 NIS	154	59.9	70	27.2	21	8.2	7	2.7	5	1.9	0.97
	1001- 2000 NIS	14	53.	9	34.6	2	7.7	0	0.0	1	3.8	
	2001- 3000 NIS	8	57.1	4	28.6	2	14.3	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I think that my medication(s) help me to control my psychological problem(s)	≤1000 NIS	159	61.9	65	25.3	21	8.2	6	2.3	6	2.3	0.77
	1001- 2000 NIS	16	61.5	5	19.2	4	15.4	1	3.8	0	0.0	
	2001- 3000 NIS	6	42.9	5	35.7	3	21.4	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I feel it is not necessary to take my medication	≤1000 NIS	22	8.5	23	8.9	30	11.6	41	15.8	142	55.0	0.42
	1001- 2000 NIS	2	7.7	2	7.7	7	26.9	2	7.6	13	50.0	
	2001- 3000 NIS	0	0.0	1	7.1	3	21.4	2	14.2	8	57.1	
	>3000 NIS	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	
I think it's safe for me to reduce or increase the dosage without consulting my doctor	≤1000 NIS	9	3.5	18	7.0	26	10.1	45	17.5	159	61.9	0.50
	1001- 2000 NIS	0	0.0	4	15.4	2	7.7	2	7.6	18	69.2	
	2001- 3000 NIS	1	7.1	2	14.3	2	14.3	2	14.2	7	50.0	
	>3000 NIS	0	0.0	1	50.0	0	0.0	0	0.0	1	50.0	

Table (5.36): Cross-tabulation between the participants' responses to the questions related to knowledge and perception of the psychological problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I think that my medications have serious side effects that may affect my health	≤1000 NIS	9	3.5	20	7.8	37	14.3	51	19.7	141	54.7	0.22
	1001- 2000 NIS	0	0.0	1	3.8	6	23.1	4	15.3	15	57.7	
	2001- 3000 NIS	1	7.1	0	0.0	2	14.3	3	21.4	8	57.1	
	>3000 NIS	0	0.0	0	0.0	2	100	0	0.0	0	0.0	
I think mental illness can be prevented	≤1000 NIS	23	8.9	91	35.3	81	31.4	45	17.4	18	7.0	0.02
	1001- 2000 NIS	8	30.8	7	26.9	5	19.2	1	3.8	5	19.2	
	2001- 3000 NIS	2	14.3	5	35.7	6	42.9	0	0.0	1	7.1	
	>3000 NIS	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	
The people around me treat me in a bad way because of my psychological problem and so it decreases my desire to take my medication(s)	≤1000 NIS	5	1.9	20	7.8	36	14.0	69	26.8	127	49.4	0.16
	1001- 2000 NIS	0	0.0	7	26.9	3	11.5	3	11.5	13	50.0	
	2001- 3000 NIS	0	0.0	2	14.3	1	7.1	4	28.5	7	50.0	
	>3000 NIS	0	0.0	1	50.0	0	0.0	0	0.0	1	50.0	
The stigma of my psychological problem decreases my desire to take my medication(s)	≤1000 NIS	7	2.7	12	4.7	57	22.1	89	34.5	93	36.0	0.03
	1001- 2000 NIS	0	0.0	4	15.4	4	15.4	5	19.2	13	50.0	
	2001- 3000 NIS	1	7.1	0	0.0	3	21.4	0	0.0	10	71.4	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	
Going to a mental health centers or clinics reduce my desire to take my medicines regularly	≤1000 NIS	6	2.3	16	6.2	40	15.5	55	21.3	141	54.7	0.95
	1001- 2000 NIS	1	3.8	1	3.8	3	11.5	4	15.3	17	65.4	
	2001- 3000 NIS	0	0.0	0	0.0	3	21.4	2	14.2	9	64.3	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	

Moreover, cross tabulation showed no statistically significant relationships between the income status and their responses to any of the questions related to duration of illness (see table 5.28, appendix D), drugs daily regimen (see table 5.29, appendix D), and cost of treatment (see table 5.30, appendix D).

Only three questions (q4, q9, q12) had statistically significant relationship when cross tabulation was done between the income status and their relationship with the doctor (see table 5.37). For example, 86.5% (n=223) of participants with income of 1000 NIS and less and 84.6% (n=22) of those with income 1001-2000 NIS versus 92.8% (n=13) of those with income 2001-3000 NIS and 50% (n=1) of those with income greater than 3000 NIS reported that the doctor “always or often” allow them to say anything during the visit (p=.00).

Also, 47.5% (n=112) of participants with income of 1000 NIS and less and 56% (n=14) of those with income 1001-2000 NIS versus 69.2% (n=9) of those with income 2001-3000 NIS and 50% (n=1) of those with income greater than 3000 NIS reported that they “always or often” reached their doctors for a help without any problem while 18.6% (n=44) of participants with income less than 1000 NIS and 20% (n=5) of those with income 1001-2000 NIS versus 50% (n=1) of those with income greater than 3000 NIS indicated it as “rarely or never” (p=.04).

In addition, 96.5% (n=149) of the participants with income of 1000 NIS and less and 96.1% (n=25) of those with income 1001-2000 NIS versus 85.7% (n=12) of those with income 2001-3000 NIS and 50% (n=1) of those with income greater than 3000 NIS reported that they “always or often” when they visited the clinic, the medical staff (nurse/pharmacist etc.) dealt with them friendly and with respect. (p=.00).

Table (5.37): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The same Doctor sees me in every visit I go to the clinic	≤1000 NIS	46	17.8	105	40.7	93	36.0	11	4.2	3	1.2	0.89
	1001- 2000 NIS	2	7.7	14	53.8	10	38.4	0	0.0	0	0.0	
	2001- 3000 NIS	4	28.6	6	42.9	4	28.5	0	0.0	0	0.0	
	>3000 NIS	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	
The doctor treats me with respect when I visit him in the clinic	≤1000 NIS	229	88.8	23	8.9	5	1.9	1	0.3	0	0.0	0.96
	1001- 2000 NIS	24	92.3	1	3.8	1	3.8	0	0.0	0	0.0	
	2001- 3000 NIS	12	85.7	1	7.1	1	7.14	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
I'm satisfied with the medical care I receive in the clinic	<1000 NIS	163	63.2	74	28.7	16	6.2	3	1.16	2	0.8	0.93
	1001- 2000 NIS	18	69.2	7	26.9	0	0.0	1	3.8	0	0.0	
	2001- 3000 NIS	11	78.6	3	21.4	0	0.0	0	0.0	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	
The doctor allow me to say anything I think it's important for my health during the visit	≤1000 NIS	155	60.1	68	26.4	23	8.9	11	4.2	1	0.4	0.00
	1001- 2000 NIS	18	69.2	4	15.4	1	3.8	2	7.6	1	3.8	
	2001- 3000 NIS	10	71.4	3	21.4	1	7.14	0	0.0	0	0.0	
	>3000 NIS	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	
The doctor makes me feel foolish sometimes during the visit	≤1000 NIS	7	2.7	13	5.1	30	11.7	86	33.5	120	46.9	0.29
	1001- 2000 NIS	0	0.0	0	0.0	2	7.6	4	15.3	20	76.9	
	2001- 3000 NIS	0	0.0	2	14.3	1	7.1	4	28.5	7	50.0	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	

Table (5.37): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor acts too serious/formal and impersonal towards me	≤1000 NIS	154	59.9	83	32.3	12	4.6	4	1.5	4	1.6	0.99
	1001- 2000 NIS	14	53.8	10	38.5	2	7.6	0	0.0	0	0.0	
	2001- 3000 NIS	9	64.3	4	28.6	1	7.1	0	0.0	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	
The doctor during the examination or visit hurry too much to finish it quickly	≤1000 NIS	11	4.3	25	9.7	57	22.0	63	24.4	102	39.5	0.32
	1001- 2000 NIS	1	3.8	0	0.0	4	15.3	5	19.2	16	61.5	
	2001- 3000 NIS	0	0.0	3	21.4	0	0.0	4	28.5	7	50.0	
	>3000 NIS	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	
The doctor sometimes ignores what I tell him/her concerning my psychological problem	≤1000 NIS	6	2.3	20	7.8	28	10.8	72	28.0	131	51.0	0.50
	1001- 2000 NIS	0	0.0	1	3.8	1	3.8	4	15.3	20	76.9	
	2001- 3000 NIS	0	0.0	1	7.1	1	7.1	3	21.4	9	64.3	
	>3000 NIS	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	
If I have a medical question, I can reach the doctor for help without any problem	≤1000 NIS	17	7.2	95	40.3	80	33.9	31	13.1	13	5.5	0.04
	1001- 2000 NIS	5	20.0	9	36.0	6	24.0	1	4.00	4	16.0	
	2001- 3000 NIS	2	15.4	7	53.8	4	30.8	0	0.00	0	0.0	
	>3000 NIS	0	0.0	1	50.0	0	0.00	0	0.00	1	50.0	

Table (5.37): Cross-tabulation between the participants' responses to the questions related to patient-doctor relationship and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The doctor listen carefully to what I have to tell him/her	≤1000 NIS	164	63.6	68	26.4	21	8.14	3	1.16	2	0.8	0.44
	1001-2000 NIS	16	61.5	7	26.9	0	0.00	2	7.69	1	3.8	
	2001-3000 NIS	8	57.1	5	35.7	1	7.14	0	0.00	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	
My doctor spends enough time with me during the visit	≤1000 NIS	161	62.4	60	23.3	30	11.6	2	0.7	5	1.9	0.31
	1001-2000 NIS	15	57.7	2	7.7	6	23.0	1	3.8	2	7.7	
	2001-3000 NIS	11	78.6	2	14.3	1	7.1	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
When I visit the clinic, the medical staff (nurse/pharmacist etc.) deals with me friendly and with respect	≤1000 NIS	199	77.1	50	19.4	7	2.7	2	0.7	0	0.0	0.00
	1001-2000 NIS	20	76.9	5	19.2	1	3.8	0	0.0	0	0.0	
	2001-3000 NIS	12	85.7	0	0.0	2	14.2	0	0.0	0	0.0	
	>3000 NIS	1	50.0	0	0.0	0	0.0	0	0.0	1	50	
When I visit the clinic, I wait long time in the waiting room before I can see the doctor	≤1000 NIS	14	5.4	22	8.5	80	31.0	91	35.2	51	19.8	0.10
	1001-2000 NIS	0	0.0	2	7.7	6	23.0	7	26.9	11	42.3	
	2001-3000 NIS	0	0.0	3	21.4	3	21.4	5	35.7	3	21.4	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	

Moreover, it was found that three questions (q3, q4, q7) related to the clarity of drugs' usage instructions had statistically significant relationship with the participants' income status (see table 5.38). For example, the majority of the participants 89.5% (n=231) with income of 1000 NIS and less and 88.5% (n=23) of those with income 1001-2000 NIS versus 92.8% (n=13) of those with income 2001-3000 NIS and 100% (n=2) of those with income greater than 3000 NIS reported that the medical staff "always or often" use clear and simple language when they give instructions to them (p=.01).

Further, 76.7% (n=198) of participants with income of 1000 NIS and less and 53.8% (n=14) of those with income 1001-2000 NIS versus 92.9% (n=13) of those with income 2001-3000 NIS and 50% (n=1) of those with income greater than 3000 NIS reported that the treating doctor “always or often” gave them information or special advices to maintain their health and avoid relapses. Whereas, 10.4% (n=27) of participants with income less than 1000 NIS versus 26.9% (n=7) of those with income 1001-2000 NIS indicated that as “sometimes” (p=.04).

Table (5.38): Cross-tabulation between the participants’ responses to the questions related to clarity of treatment and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
The drug- use instructions written by the doctor are clear to me	≤1000 NIS	128	49.6	121	46.9	9	3.4	0	0.0	0	0.0	0.42
	1001- 2000 NIS	15	57.7	8	30.8	3	11.5	0	0.0	0	0.0	
	2001- 3000 NIS	8	57.1	5	35.7	1	7.1	0	0.0	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	
The medical staff (nurse/doctor) explain to me and give me accurate information about the importance of controlling my psychological symptoms	≤1000 NIS	177	68.6	51	19.8	21	8.1	5	1.9	4	1.6	0.83
	1001- 2000 NIS	19	73.1	4	15.4	1	3.8	0	0.0	2	7.7	
	2001- 3000 NIS	10	71.4	3	21.4	1	7.1	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
The medical staff (nurse/doctor) use clear and simple language when they give me instructions about my psychological problem and ways to control it	≤1000 NIS	176	68.2	55	21.3	21	8.1	4	1.5	2	0.8	0.01
	1001- 2000 NIS	21	80.8	2	7.7	0	0.0	0	0.0	3	11.5	
	2001- 3000 NIS	12	85.7	1	7.1	1	7.1	0	0.0	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.0	0	0.0	0	0.0	
My doctor explains me the reason for performing a medical tests he recommend	≤1000 NIS	31	12.0	70	27.1	65	25.2	53	20.5	39	15.1	0.00
	1001- 2000 NIS	4	15.4	2	7.6	4	15.4	4	15.4	12	46.2	
	2001- 3000 NIS	2	14.3	3	21.4	2	14.2	5	35.7	2	14.3	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	

Table (5.38): Cross-tabulation between the participants' responses to the questions related to clarity of treatment and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
When my doctor changes my drugs, he explains to me the reason for that	≤1000 NIS	36	14.0	70	27.2	63	24.5	47	18.2	41	16.0	0.05
	1001- 2000 NIS	3	12.0	6	24.0	4	16.0	5	20.0	7	28.0	
	2001- 3000 NIS	2	14.3	5	35.7	0	0.0	1	7.1	6	42.9	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	
The doctor uses difficult medical terms without explaining what they mean	≤1000 NIS	15	5.8	34	13.2	39	15.1	65	25.1	105	40.7	0.37
	1001- 2000 NIS	1	3.8	1	3.8	3	11.5	3	11.5	18	69.2	
	2001- 3000 NIS	2	14.3	1	7.1	2	14.2	3	21.4	6	42.9	
	>3000 NIS	0	0.0	0	0.0	0	0.0	0	0.0	2	100	
The doctor gives me advices and information about different ways to avoid relapses	≤1000 NIS	129	50.0	69	26.7	27	10.4	20	7.7	13	5.0	0.04
	1001- 2000 NIS	11	42.3	3	11.5	7	26.9	2	7.6	3	11.5	
	2001- 3000 NIS	7	50.0	6	42.9	0	0.0	0	0.0	1	7.1	
	>3000 NIS	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	

Moreover, two items (q2, q3) related to the family support had statistically significant relationship with the participants' income status (see table 5.39). For example, 87.2% (n=225) of participants with income of 1000 NIS and less and 84.6% (n=22) of those with income 1001-2000 NIS versus 57.1% (n=8) of those with income 2001-3000 NIS and 100% (n=2) of those with income greater than 3000 NIS reported their family members "always or often" helped them in taking their medications while 4.2% (n=11) of participants with income less than 1000 NIS and 11.5% (n=3) of those with income 1001-2000 NIS versus 28.5% (n=4) of those with income 2001-3000 NIS responded as "rarely or never" (p=.00).

Furthermore, 9.3% (n=24) of participants with income of 1000 NIS and less and 15.3% (n=4) of those with income 1001-2000 NIS versus 7.1% (n=1) of those with income 2001-3000 NIS and 50% (n=1) of those with income greater than 3000 NIS indicated that their families "rarely or never" helped them financially to get their medications (p=.03).

Table (5.39): Cross-tabulation between participants' responses to the questions related to family support problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members remind me about my medications	≤1000 NIS	131	50.8	101	39.1	20	7.75	3	1.16	3	1.2	0.34
	1001- 2000 NIS	15	57.7	6	23.1	4	15.38	1	3.85	0	0.0	
	2001- 3000 NIS	4	28.6	6	42.9	2	14.29	1	7.14	1	7.1	
	>3000 NIS	1	50.0	1	50.0	0	0.00	0	0.00	0	0.0	
My family members help me in taking my medications	≤1000 NIS	171	66.3	54	20.9	22	8.53	5	1.9	6	2.3	0.00
	1001- 2000 NIS	14	53.8	8	30.8	1	3.85	0	0.00	3	11.5	
	2001- 3000 NIS	8	57.1	0	0.0	2	14.29	3	21.4	1	7.1	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	
My family members help me financially to get my medications when I need	≤1000 NIS	127	49.2	87	33.7	20	7.75	15	5.81	9	3.5	0.03
	1001- 2000 NIS	13	50.0	4	15.4	5	19.23	3	11.54	1	3.8	
	2001- 3000 NIS	5	35.7	6	42.9	2	14.29	0	0.00	1	7.1	
	>3000 NIS	0	0.0	1	50.0	0	0.00	0	0.00	1	50.0	
My family members help me in reaching the mental health clinic if I'm tiered or sick	≤1000 NIS	147	57.0	73	28.3	26	10.08	6	2.33	6	2.3	0.96
	1001- 2000 NIS	16	61.5	7	26.9	2	7.69	0	0.00	1	3.8	
	2001- 3000 NIS	9	64.3	3	21.4	1	7.14	1	7.14	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	
My family members help me in dealing with the side effects of my medications	≤1000 NIS	133	51.6	86	33.3	24	9.30	6	2.33	9	3.5	0.93
	1001- 2000 NIS	10	40.0	9	36.0	3	12.00	1	4.00	2	8.0	
	2001- 3000 NIS	7	50.0	4	28.6	3	21.43	0	0.00	0	0.0	
	>3000 NIS	1	50.0	1	50.0	0	0.00	0	0.00	0	0.0	

Table (5.39): Cross-tabulation between participants' responses to the questions related to family support problem and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
My family members encourage me to be compliant with my medication and treatment plan	≤1000 NIS	198	76.7	41	15.9	15	5.81	1	0.39	3	1.2	0.99
	1001- 2000 NIS	20	76.9	3	11.5	2	7.69	0	0.00	1	3.8	
	2001- 3000 NIS	12	85.7	1	7.1	1	7.14	0	0.00	0	0.0	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	

Similar to previous findings, only two questions (q2, q7) out of eight questions related to the participants' regularity on doctor appointments and the treatment plan revealed statistically significant relationship with their income status (see table 5.40). For example, 93% (n=240) of participants with income of 1000 NIS and less and 76.9% (n=20) of those with income 1001-2000 NIS versus 92.9% (n=13) of those with income 2001-3000 NIS and 100% (n=2) of those with income greater than 3000 NIS reported that they "always or often" took their drugs at regular basis (p=.03).

Also, 16% (n=41) of participants with income less than 1000 NIS and 19.2% (n=5) of those with income 1001-2000 NIS versus 42.8% (n=6) of those with income 2001-3000 NIS reported that they "always or often" reduced or increased their medication(s) without consulting their doctor (p=.04).

Table (5.40): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I'm always regular at my doctor's appointments	≤1000 NIS	176	68.2	60	23.3	12	4.65	5	1.94	5	1.9	0.23
	1001- 2000 NIS	13	50.0	7	26.9	4	15.3	2	7.69	0	0.0	
	2001- 3000 NIS	11	78.6	2	14.3	0	0.00	0	0.00	1	7.1	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	

Table (5.40): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I take my drugs in a regular basis, as described by my doctor	≤1000 NIS	179	69.4	61	23.6	7	2.71	6	2.33	5	1.9	0.03
	1001- 2000 NIS	17	65.4	3	11.5	5	19.23	0	0.00	1	3.8	
	2001- 3000 NIS	11	78.6	2	14.3	0	0.00	0	0.00	1	7.1	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	
I forget to take my drugs because of being busy in other things in life	≤1000 NIS	5	1.9	26	10.1	38	14.79	57	22.18	131	51.0	0.33
	1001- 2000 NIS	0	0.0	3	11.5	5	19.23	3	11.54	15	57.7	
	2001- 3000 NIS	2	14.3	1	7.1	2	14.29	2	14.29	7	50.0	
	>3000 NIS	0	0.0	0	0.0	0	0.00	0	0.00	2	100	
When I feel better, I stop taking my medication(s)	≤1000 NIS	10	3.9	35	13.6	46	17.83	26	10.08	141	54.7	0.45
	1001- 2000 NIS	0	0.0	2	7.7	5	19.23	3	11.54	16	61.5	
	2001- 3000 NIS	1	7.1	5	35.7	1	7.14	0	0.00	7	50.0	
	>3000 NIS	0	0.0	1	50.0	0	0.00	0	0.00	1	50.0	
If I feel worse because of the side effects of my medicine(such as Insomnia, headache, cramping), I stop taking it without consulting my doctor	≤1000 NIS	7	2.7	20	7.8	20	7.75	42	16.28	169	65.5	0.96
	1001- 2000 NIS	1	3.8	2	7.7	1	3.85	5	19.23	17	65.4	
	2001- 3000 NIS	1	7.1	2	14.3	2	14.29	2	14.29	7	50.0	
	>3000 NIS	0	0.0	0	0.0	0	0.00	0	0.00	2	100	
I always visit my doctor personally for follow-up and drug prescription	≤1000 NIS	145	56.2	71	27.	24	9.30	11	4.26	7	2.7	0.07
	1001- 2000 NIS	14	53.8	3	11.5	8	30.77	0	0.00	1	3.8	
	2001- 3000 NIS	11	78.6	1	7.1	1	7.14	0	0.00	1	7.1	
	>3000 NIS	2	100	0	0.0	0	0.00	0	0.00	0	0.0	

Table (5.40): Cross-tabulation between the participants' responses to the questions related to regularity and treatment follow and income status.

Variable	Income	always		often		sometimes		rarely		never		P
		F.	%	F.	%	F.	%	F.	%	F.	%	
I reduce or increase my medication(s) without consulting my doctor	≤1000 NIS	10	3.9	31	12.1	46	17.90	39	15.18	131	51.0	0.04
	1001- 2000 NIS	0	0.0	5	19.2	2	7.69	4	15.38	15	57.7	
	2001- 3000 NIS	1	7.1	5	35.7	1	7.14	0	0.00	7	50.0	
	>3000 NIS	0	0.0	0	0.0	2	100	0	0.00	0	0.0	
I feel that there is no need to take my medicine because I don't have a problem requiring medication	≤1000 NIS	15	5.8	25	9.7	45	17.44	30	11.63	143	55.4	0.91
	1001- 2000 NIS	1	3.8	1	3.8	4	15.38	1	3.85	19	73.1	
	2001- 3000 NIS	1	7.1	1	7.1	2	14.29	1	7.14	9	64.3	
	>3000 NIS	0	0.0	0	0.0	1	50.00	0	0.00	1	50.0	

5.6 Binary logistic regression

The logistic regression analysis was used to evaluate the association between the patient's compliance expressed as zero hospitalization and once or more hospitalization to mental hospitals and some of the independent variables as shown in table (5.41).

The model with non-compliance as the dependent variable included the following independent variables (the reference categories are mentioned first): gender (male, female), age (15-30, 31-45, 46-60. over 60), place of residency (village, city, camp), marital status (single, married, divorced, widowed), educational level (primary, elementary, secondary, university degree), work statues (employed, unemployed, retired, other), income status (<1000 NIS, 1001-2000 NIS. 2001-3000 NIS, >3000 NIS), number of medication prescribed (one, two, three drugs or more), daily drugs regimen (once, twice, three times, more than three times, never, I can't remember), regimen interruptions (once, twice, three times, more than three times, never, I can't remember), the frequency of doctor visits (once a month, once every three months, once every six months, more than six months), the clarity of medical instruction (always/often, sometimes, rarely/never), the family and social support and encouragement(always/often, sometimes, rarely/never), duration of illness (always/often, sometimes, rarely/never), Insight (always/often, sometimes, rarely/never), medication side effects (always/often, sometimes, rarely/never), stigma (always/often, sometimes, rarely/never). P-value of < 0.05 were considered statistically significant in all analysis.

The logistic regression analysis of the study population revealed that gender, age, place of residency, marital status, educational level, work status, income status, number of drugs regimen, daily drugs regimen, regimen interruption, number in change of medication, frequency of doctor visits, clear of instruction, family support and encouragement and medication side effects did not influence the compliance rate of the patients which is expressed as re-hospitalization.

On the other hand only duration of illness, insight and stigma showed an association with the compliance rate. For example the duration of the illness showed statistically significant association with the compliance rate (.055) and those who reported that long duration of the illness sometimes decreased their desire to take their medication where .293 (95%CI, 094-914: b=.034) times more compliant when compared with those who said "always or often".

Also, insight about the illness revealed statistically significant relationship with the compliance rate with treatment (p=.045) and those who stated that their mental health problem “sometimes” needed medical intervention were 4.880 (95%CI, 1.404-16.964: p=.013) times less compliant than those who reported as “always or often”.

Finally the patient’s stigma about their illness showed statistically significant effect on the compliance rate (0.029) and those who said that the stigma of having a mental health problem “sometimes” depressed their desire to take their medications were .171 (95%CI, .046-.634: p=0.008) times more compliant than those who stated as “always or often”.

Table (5.41): Binary logistic regression with the re-hospitalization

Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95.0% C.L. for Exp (B)	
							Lower	Upper
Sex (ref.=male)								
(female)	.442	.555	.636	1	.524	1.556	.217	1.905
Age (ref.=15-30)			1.528	3	.676	1.796		
(31-45)	.586	1.147	.261	1	.610	1.109	.190	17.010
(46-60)	.104	1.105	.009	1	.925	.688	.127	9.670
(>60)	-.375	1.179	.101	1	.751	.045	.068	6.927
Place of Residency								
(ref.=Village)			2.595	2	.273			
(city)	18.532	40193.856	.000	1	1.000	1.118E8	.000	.000
(camp)	17.465	40193.856	.000	1	1.000	3.846E7	.000	.000
Marital Status (ref.=single)			4.949	4	.293			
(married)	18.299	40188.522	.000	1	1.000	8.851E7	.000	.000
(divorced)	17.841	40188.522	.000	1	1.000	5.602E7	.000	.000
(widowed)	18.462	40188.522	.000	1	1.000	1.042E8	.000	.000
Educational Level (ref.= none)			1.045	4	.903	.000		
(primary)	-18.370	17974.843	.000	1	.999	1.149	.000	.000
(elementary)	.139	.862	.026	1	.872	.861	.212	6.221
(secondary)	-.150	.890	.028	1	.866	.543	.150	4.925
(university degree)	-.611	.935	.428	1	.513	.059	.087	3.388
Work Status (ref.=employed)			.000	3	1.000			
(unemployed)	.000	15059.476	.000	1	1.000	1.000	.000	.000
(retired)	18.495	4985.325	.000	1	.997	1.077E8	.000	.000
(other)	.000	23734.892	.000	1	1.000	1.000	.000	.000
Income Status (ref. ≤1000 NIS)			.119	3	.989			
(1001-2000 NIS)	18.267	28420.655	.000	1	.999	8.572E7	.000	.000
(2001-3000 NIS)	.000	29493.512	.000	1	1.000	1.000	.000	.000
(>3000 NIS)	18.638	28420.655	.000	1	.999	1.243E8	.000	.000
number of drugs regimen								
(ref.=one)			.231	2	.891			
(two drugs)	-.378	.786	.231	1	.631	.685	.000	.000
(three drugs or more)	-18.691	3979.697	.000	1	.996	.000	.000	.000
Daily drugs regimen (ref.= one)			7.988	2	.018			
(two drugs)	-1.953	1.056	3.418	1	.064	.142	.018	1.125
(three drugs or more)	-1.832	.780	5.511	1	.019	.160	.035	.739
Instructions are clear								
(ref.= always or often)								
Sometimes	.563	1.079	.273.	1	.602	1.756	.212	14.553
Rarely or never								

Table (5.41): Binary logistic regression with the re-hospitalization

Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95.0% C.L. for Exp (B)	
							Lower	Upper
Regimen interruption								
(ref.= once)			2.918	5	.713			
(twice)	.000	23534.585	.000	1	1.000	1.000	.000	.000
(three times)	.000	25420.259	.000	1	1.000	1.000	.000	.000
(more than three times)	19.257	17974.832	.000	1	.999	2.308E8	.000	.000
(never)	19.043	17974.832	.000	1	.999	1.864E8	.000	.000
(I can't remember)	18.042	17974.832	.000	1	.999	6.845E7	.000	.000
Number in change of medication								
(ref.= once)			1.452	4	.835			
(twice)	.442	.636	.483	1	.487	1.556	.447	5.410
(three times)	-.693	1.077	.414	1	.520	.500	.061	4.131
(more than three times)	-18.341	6698.828	.000	1	.998	.000	.000	.000
(never)	-.539	1.080	.249	1	.618	.583	.070	4.840
Frequency of doctor visits								
(ref. = once a month)			1.155	3	.764			
(once every three months)	-.464	1.094	.180	1	.671	.629	.074	5.364
(once every six months)	.1.078	1.198	.810	1	.368	.340	.033	3.558
(more than six months)	-18.805	23205.422	.000	1	.999	.000	.000	.000
Family encouragement								
(ref.= always or often)			.000	2	1.000			
Sometimes	-18.270	17974.843	.000	1	.999	.000	.000	.000
Rarely or never	-18.270	9473.574	.000	1	.998	.000	.000	.000
Duration of illness								
(ref.= always or often)			5.799	2	.055			
Sometimes	-1.227	.580	4.477	1	.034	.293	.094	.914
Rarely or never	-1.893	1.099	2.968	1	.085	.151	.017	1.298
Insight (ref.= always or often)			6.218	2	.045			
Sometimes	1.585	.636	6.218	1	.013	4.880	1.404	16.964
Rarely or never	-18.008	8569.170	.000	1	.998	.000	.000	
Medication side effects /								
(ref.= always or often)			1.115	2	.573			
Sometimes	-.412	.798	.267	1	.606	.662	.139	3.164
Rarely or never	.389	1.039	.140	1	.708	1.476	.193	11.316
Stigma (ref.= always or often)			7.085	2	.029			
Sometimes	-1.768	.669	6.979	1	.008	.171	.046	.634
Rarely or never	-1.403	.806	3.029	1	.082	.246	.051	1.194

5.7. Summary

- Three hundred patients with schizophrenia participated in the current study

- Out of the 300 participants, 286 (95.3%) had no hospital admissions were considered to be compliant with their treatment plan, whereas 14 (4.7%) who had hospital admissions were considered non-compliant with their treatment regimen.

- Regarding their gender, 67% (n=201) of them were males and 33% (n=99) were females. Their ages ranged from 18 to 76 years of which 17.7% aged from 15 to 30 years, 41.7% aged from 31 to 45 years, 33.0% aged from 46 to 60 years, and 7.7% were over the age of sixty years.

- The majority were unemployed (74.7%), only (2.7%) were employed, (1%) were retired from their jobs and (21.7%) were other than these classification such as temporary workers.

- The majority of the participants (59%) were married, (25.7%) were single, (11%) were divorced, and (3.3%) were widowed.

- The logistic regression analysis revealed that the following variables had statistically significant relationship with compliance rate: insight and stigma of illness.

- The logistic regression analysis of the study population revealed that gender, age, place of residency, marital status, educational level, work status, income status, number of drugs regimen, daily drugs regimen, regimen interruption, number in change of medication, frequency of doctor visits, clear of instruction, family support and encouragement and medication side effects did not influence the compliance rate of the patients which is expressed as no re-hospitalization.

Chapter six
Discussion

6.1. Introduction

This chapter presents the major findings of the current study and the interpretation of its findings in relation to previously conducted studies found in literature review. The participant's characteristics and their responses to the questionnaire items were discussed. Both the frequency and percentage were calculated for each variable and question. Also, cross tabulations were done between the participants' responses to the questionnaire items and the independent variables (age, gender, education level, marital status, income status, place of residence, and work status). To test the relationships, further logistic regression analysis was utilized. The results of these statistical tests are discussed in each of the following sections:

- Section one: The characteristics of the participants.
- Section two: Compliance rate
- Section three: The participants' responses to the questionnaire items.
- Section four: Limitations and recommendations.

6.2. Section one: The characteristics of the participants

The majority of the participants were males (67%) whereas (33%) were females. Researchers recognize that schizophrenia's prevalence may be higher among men than women (Saha et al., 2005). The participants' ages ranged from 18 to 76 years, of which (59%) ranged from 15 to 45 years old. These findings my reflect schizophrenia onset is quite rare for people under 10 years of age, or over 40 years of age (Thompson and Mc Grath, 2004). Symptoms of schizophrenia usually start between ages 16 and 35 and men often develop symptoms at a younger age than women (Thompson and Mc Grath, 2004).

Regarding their place of residence, 56.7% were village residents, 43.0% were city residents and 0.3% were camp residents. These findings are in consistency with the population distribution in the Hebron district, as 85.3% of the populations in the Hebron district live in the city itself, while 12% in the villages and 2.6% in camps (PCBS, 2007).

Furthermore, more than half of the participants (59.7%) were married, (25.7%) were single, (11.0%) were divorced, and (3.3%) were widowed. According to PCBS (2007) 51.6% of the residences in Hebron are married, while 4.2% were divorced. Nyer et al. (2010) found in his study that only 13% of the total group of 211 patients was currently married or cohabitating, another 46% had been previously married. Thus, taken together, 59% of the sample had at one point been married.

Moreover, marriage is a social process requiring certain social abilities for it to be successful. Schizophrenia, which can lead to a reduction of such abilities, has been associated with a low marital rate. It is found that patients with schizophrenia who are married have better clinical and social outcomes than singles (Thornicroft, et al, 2011; Weinberger and Harrison, 2011). Further a study by Nyer et al. (2010) revealed that in middle-aged and older individuals with schizophrenia or schizoaffective disorder and depressive symptoms, marriage appeared to enhance quality of life and protect against suicidal ideation (Nyer et al., 2010). Another possible explanation for this result may be the nature of the Palestinian society and its social values which emphasize the role of the extended family in protecting its family member and in providing a help and support particularly for sick people.

Educational achievement in schizophrenia is a major problem that patients with schizophrenia have to face. The finding of the study showed low academic achievements by the patients as (1.7%) of the them were illiterate, (26.3%) reported receiving primary education (27.7%) got elementary education, (32.3%) reached the secondary school and a small percentage (12.0%) had a college or university degree. The findings are also in consistency with the fact that teens with schizophrenia often have problems functioning at school. For males, onset usually occurs at some point in late adolescence into one's early twenties (Glicken, 2009). This is the time when they are finishing high school, starting or finishing college, or entering the work force and this creates a significant disruption in the person's education and or early career (Lane, 2014).

Also, the vast majority of the participants were from low socioeconomic status as 89% of them reported earning < 1000 NIS, 8.7% earned 1001-2000 NIS, whereas 16.8% were without income at all. These findings may indicate that almost all of the participants (99.3%) were under the Palestinian poverty line which is defined by the Palestinian Central

Bureau of Statistics (PCBS) as a monthly income of less than 2375 NIS (PCBS, 2010). Further, the majority of the participants (74.7%) were unemployed, and only 2.7% were employed. These higher numbers could be in correlation with the illness itself. Schizophrenia is a chronic and profoundly disabling psychiatric disorder**;** it estimates that 70–80% of patients with schizophrenia are unemployed at any one time in addition to the low educational achievement which them with no specific marketable job skills which lead to unemployment (Rupp et al., 1993; Torrey, 1999). These findings also supported the Palestinian statistics; findings which showed that the unemployment in Palestine reached 33.3% for those aged 15 years and older (PCBS, 2010).

6.3. Section two: Compliance rate

Compliance can been defined as, "the extent to which a person's behavior coincides with medical or health advise" (Byrne, 2006). Still, clinicians have difficulty determining those who are compliant verses noncompliant in their treatment plan. Clinicians have tended to focus on patients who openly refuse or repeatedly discontinue treatment (Masand et al., 2009).

Also, researchers who have tried to measure drug compliance have realized that there is no golden standard by which compliance can be quantified (Vermeire et al., 2001). The method available for measuring adherence can be divided into direct methods such as asking the patients themselves to rate their compliance with their treatment plan or by using standardized, patients –administered questionnaire; and indirect methods such as count of the number of pills, tablets, or capsules, therapeutic drug monitoring, microelectronic monitoring systems and relapse rate (Pitschel-Walz et al., 2001); Buchanan, 2013).

In the current study, measuring compliance was estimated by using the relapse rate. The relapse rate was assessed by four methods using re-hospitalization, increase in the number of medication, increase in the dose of medication and worsening of symptoms. Information therefore was obtained from the patient's medical file. The findings of the study showed low relapse rates. For example, (95.3%) of the participants did not have hospital admissions, (89%) had no increase in the number of medications, and (93.3%) had no increase in the amount of medication. One possible reason for these findings may be related to the selection of the participants in the current study as they were selected from

the out-patients center and so their mental health condition might be stable. Another possible explanation may be that the accuracy of information in the patient's file is incomplete due to overlook of medical details by the doctor. Also, in some cases, doctors in Beit- Kahel maybe don't know if the patients are admitted to the mental hospital in Bethlehem. So such important information might not be recorded in the patients' medical files in Beit-Kahel center.

Yet the results of the current study varied widely from different studies which appear in the literature. This is in line with Young et al. (1986) who found that reported rates of adherence differed from one study to another. This partly reflects the inconsistency between the definitions of compliance/partial and compliance/non-compliance used in different studies. For example, Cramer and Rosenheck (1998) reviewed 24 studies in which methods used to assess non-compliance include patient's interview clinical assessment, urine or blood markers, and pill counts. Findings showed that adherence ranged from 10 to 76%. The mean rate of non-compliance across these studies was 42%. Fenton et al. (1997) reviewed 15 studies published between 1983 and 1996, which ranged in the period over which they assessed non-compliance from one month to two years. Other studies found that non-compliance ranged from 24 to 88% with a median of 55%. Also, Cardoso and Galera, (2009), Rosa and Elkis, (2007) and Nicolino, (2011) found that non-compliance ranged between 50 to 60%. The findings of the current study are higher than previous mentioned studies because patients who participated in the study are mentally stable and the study used a self-reported questionnaire, so the patient may have exaggerated their answers.

6.4. Section three: The participants' response to the questionnaire items

These sections discuss the nine variables that may affect the compliance rate of patients with schizophrenia with their treatment plan.

6.4.1. Medical History

In the current study, (82%) of the participants reported they never interrupted their drugs regimen. This finding was in agreement with Tellis (2008) who stated that taking prescribed medication at the correct dose and proper times each day, attending clinic appointments, and carefully following other treatment procedures are all important factors in controlling symptoms of schizophrenia (Tellis, 2008).

Further, (85.7%) of the patients reported that they did not suffer from any other physical diseases. One possible reason for this high percentage may be in line with many studies who found that despite being at an increased risk of developing various physical health problems, the detection rate and treatment of physical illness among people with mental illness is very poor (Koran et al., 1998). Some of these physical symptoms are being misinterpreted as part of psychiatric illness by professionals. Another possible explanation may be that patients with schizophrenia lack of social skills and the stigma of mental illness may also make it less likely that they receive good care (Phelan et al**.,** 2001; Lambert et al., 2003; McCreadie, 2003). Schizophrenia is associated with several chronic physical illnesses and a shorter life expectancy (Marder et al., 2004). One approach to enhance the health of patients with schizophrenia is to improve the monitoring of physical health that occurs in psychiatric settings.

Although the Palestinian Ministry of Health provides most of anti-psychotic medications for free, (51%) of the participants stated that they paid for some of their psychotic drugs while (48.7%) reported that they got all their psychotic drugs for free. The financial cost of treatment is a critical matter that should be taken into consideration in the patient's compliance, particularly for patients with chronic disease and a long-term treatment process. Clients who are responsible for the cost of all or part of treatment may cease taking their medication because they are unable to afford them (Berghofer et al., 2002). Two possible explanations for these findings regarding the cost of treatment may be the low rate of employment among patients as (74.7%) were unemployed and (86%) of them were poor according the criteria of the Palestinian Central Bureau of Statistics (2007) and also the Palestinian Ministry of Health does not always provide all the medication so patients had to buy them.

Also, the majority of the participants (96.7%, n=290) indicated that they brought their own medication themselves, 1.7% (n=5) reported their families, and 1.7% (n=5) indicated others such as friends or neighbors. At the same time nearly two third of them (61.7%, n=185) reported that they visited their psychiatrists every month, 33.3% (n=100) visited them at least once every three months, 1% (n=3) visited their doctors every six months, and 4% (n=12) didn't visit the doctor for more than six months. This contradiction in the findings may be due to the fact that data collection depended on self-reported questionnaire so the patients may have exaggerated their answers.

Furthermore, most of the participants (87.7%) believed that they didn't need to go to religious leaders, folk and traditional healers anymore for their mental problems, although (57.3%) of them already went to visit them in the past. If a person believes that the cause is a supernatural or religious, one tends to seek faith healing as a remedy for the illness. Thus, seeking such help becomes the first step in the management of most mental disorders, which can lead to lack of detection of the illness and long delays in seeking medical attention (Kulhara et al., 2000; Kapur, 1975; Padmavati et al., 2005). One possible explanation for the high result in the current study may be that family members either convince them or force them to go to the traditional healers against their will.

A study by Rhemah (2011) that was conducted in Iraq revealed that (22%) have no any contact, (47%) contact faith healer before and after, (7%) before, 24% after the diagnosis and treatment. Types of traditional faith healer contacts were: Sayed (37%); visiting Emams (54%); jinn dealers (32%); Daraweesh (17%); witchcraft (3%); and reading Holly Quran (9%). Causes of illness were: life stresses (42%); patient himself (25%); poor faith and belief (14%); weak personality (11%); genetic causes (4%); witchcraft (5%); Jinn possession (11%); and wish of God 13%. Also, results of small studies conducted in South Africa investigating individuals with a mental illness report that approximately one-half (41–61%) of patients have consulted a traditional healer (Freeman et al., 1994; Ensink and Robertson, 1999).

Therefore, mental health practitioners could collaborate effectively with traditional healers in Arab communities. Traditional healers are part of the client's culture. Healer and client share a common worldview that stresses the importance of their joint origin and helps them understand the problem, its sources, and the best ways of relating to it. The element of worldview is an important factor in the traditional system's efficacy (Al-Krenawi & Graham, 1996a, 1997b, 1997c; El-Islam, 1982).

Regarding medications, roughly half of the participants (49.3%) said that their doctor never changed their prescribed medication, (16.3%) had their medication changed once, (12%) twice, and 12% three times, and (10.3%) more than three times. In general, frequent changing of medication can be a barrier to patient compliance since the patient must frequently adjust to the changes in the regimen. On the other hand, the logistic regression

showed that the number of times the doctor changed the medication for the patient did not statistically affect the compliance rate.

6.4.2. Participants' knowledge and perceptions

The findings of the study revealed a variation in the patient's knowledge. For example, participants' answers revealed poor knowledge regarding whether patient's gender affects the possibility of having a mental disease, the role of heredity in developing schizophrenia and the possibility in preventing mental illness.

For example, (68%) believed that being male or female will "always or often" affect the risk of having a mental disorder, (45.7%) believed that mental illness can "rarely or never" be prevented, while (80.3%) of respondents believed that their psychological problem "rarely or never" has a hereditary basis. There was almost no difference between the non-educated and educated patients regarding this statement as (80%) of the non-educated and (86%) of those who got elementary education versus (83.3%) of those who got university education stated that they "rarely or never" thought that schizophrenia has hereditary basis.

The findings of the study are supported by Wong et al. (2006) who stated that many people with schizophrenia have poor awareness of their illness. Also, Velligan et al. (2009) found patients knowledge about their illness and treatment is not always adequate.

On the other hand, the current results also revealed better knowledge in other aspects such as the patient's perception of mental illness as a serious problem that needs medical interventions, the effect of physical activities in reducing tension, the effect of medication in controlling their mental problem. For example (86.30%) stated that their medication "always or often" help them to control their mental problems and (84.6%) thought that their psychological problem is "always or often" a serious problem that needs treatment. This influenced the participants' compliance to their treatment as those who stated that their mental health problem is "sometimes" a serious problem that need medical intervention were 4.880 (95%CI, 1.404-16.964: p=.013) times less compliant than those who reported as "always or often".

These findings were in agreement with several studies which reported that patients who understand the purpose of the prescription are twice more likely to collect it than those who

do not understand (Kelly et al., 1987; Daltroy et al., 1991). Also Buchanan (1992) studied 61 patients with schizophrenia with a prospective study found that if the patient believed that medication had helped them during the hospitalization, they had better compliance (Buchanan, 1992).

In addition (85.7%) of the participants believed decreasing tension and anger “always or often” will help them control their mental problem and (87.3%) of the patients stated that they “always or often” take their medication for the treatment and alleviation of their mental problem. One possible explanation for these findings may be the patients experience with the disease acquired through time or the advices frequently given to them by the medical staff concerning their disease.

Also, in the current study, the vast majority of the participants (88%) said that they had a psychological problem and (94.3%) believed that their psychological problem needed medical intervention. It was found that there is a relationship between insight and level of compliance as there is a correlation between patients showing lack of insight during assessment at hospital admissions, discharge and post discharge and non-compliance (Van Putten et al., 1976; Bartko et al., 1988; Pinikahana et al., 2002, Misdrahi et al., 2002).

In the current study Insight about the illness revealed statistically significant relationship with the compliance rate with treatment (p=.045) and those who stated that their mental health problem “sometimes” needed medical intervention were 4.880 (95%CI, 1.404-16.964: p=.013) times less compliant than those who reported as “always or often”. These findings are in agreement with other studies which found that higher levels of insight predict better compliance (Amador et al., 1991, Day et al., 2005).

Smith et al. (1997) also noted that patients who were more aware of their mental illness and who benefited of treatment were more likely to comply with prescribed medications. Moreover, poor insight is associated with poor compliance and higher levels of insight correlate with better compliance (Amador et al., 1991; Lacro et al., 2002). Also, Yen et al. (2005) found a significant association between insight and medication adherence at index interview in patients with schizophrenia.

Yet, lacking of Insight seems less important for appreciating subjective symptom relief due to medication than for indirect treatment benefit such as hospitalization or coercion (Kikkert

et al., 2006). A patient who uses his or her medication because it improves well-being does not necessarily need to have insight into the disorder. This might also explain why Nageotte et al. (1997) found that 38% of patients were compliant despite the fact that they did not believe themselves to be ill.

Regarding medication side effects (74%) of the participants stated that side effect of medication “rarely or never” affected their health. Although medication side effects have often been associated with non-adherence (Weiden et al., 1986, Fleischhacker et al., 1994; Rettenbacher et al., 2004), a consistent correlation between the presences or severity of side effects and the degree of adherence could not be found in a recent systematic review by Lacro et al. (2002). Another prospective study conducted by Linden et al. (2001) reported no relation between adherence and lack of insight. Side effects might not be the most important factor in determining adherence behavior and may have less impact than the efficacy of medication or expressed beliefs concerning susceptibility to relapse (Adams and Howe, 1993; Kampman and Lethtinen, 1999; Mutsatsa et al., 2003).

Finally, (71.7%) of the participants stated that the stigma of their mental illness “rarely or never“ decreases their desire to take their antipsychotic medication and (76.7%) reported that going to a mental health centers “rarely or never“ reduced their desire to take their medication regularly. Yet the patient’s stigma about their illness showed statistically significant effect on the compliance rate (0.029) and those who said that the stigma of having a mental health problem “sometimes” depressed their desire to take their medications were .171 (95%CI, .046-.634: p=0.008) times more compliant than those who stated as “always or often”. This result was in agreement with many studies which reported that stigma is associated with the level of treatment adherence among people with schizophrenia (Dickerson et al., 2002; Fung et al., 2008; Tsang et al., 2010). For example, a study by Fung et al., (2008) found that self-stigma is one of the contributing factors in undermining treatment adherence. Individuals with schizophrenia often endorse a feeling of self-disregard and incompetence which affects their motivation for seeking therapy (Fung et al., 2008).

Also, in a study of 74 outpatients with schizophrenia, all but one respondent indicated that they had at least one experience of stigma, their number one worry being that others view them unfavorably due to their illness. Other concerns included avoidance of telling others about their disorder, having heard others talking negatively about people with mental

illness, and hearing or seeing negative accounts of mental illness in the media (Dickerson et al., 2002).

Moreover, a one-year cross-sectional study with 105 participants' face-to-face interviews was conducted to assess participant's level of self-stigma. The study found that lower levels of self-stigma were associated with better treatment participation (Tsang et al., 2010).

Finally, the knowledge about the disease and its treatment is an important factor in achieving good level of compliance. This could be achieved through community awareness programs, campaigns and mass screening programs (WHO, 2002, Halpin et al., 2010).

6.4.3. Duration of the treatment period

Based on the findings of the study, (35%) of the participants suffered from schizophrenia for 10 years or less, (52.2%) suffered for 11 to 30 years, and (12.8%) for more than 31 years. This long duration did not affect their desire to take their medication as more than half of the participants (64.7%) answered that the long duration of their mental problem "rarely and never" affected their desire to take drugs. One possible explanation for this high percentage may be that schizophrenia symptoms may decrease by aging (Jeste et al., 2011), and positive symptoms tend to lessen with age, but negative symptoms and cognitive impairments continue to worsen (Kareem et al., 2005; Rosenberg et al., 2009). Also, Bankole et al. (2008) and Cohen et al (2009) reported that positive symptoms can remit in 40% to 50% of older adults, especially those who have greater social support and fewer lifetime traumatic events. Also, the family support provided to patients during the illness may play here a role; the findings of the current study showed good family support provided to the patients as mentioned in page 74.

Another possible explanation for these findings may be that patient's attitude of denying the disease is reduced by time, and they accept treatment after years of suffering from the disease (Davidson, 2003.

Also, the logistic regression analysis of the current study revealed that the patient's compliance was statistically significantly related to the life span of the disease (p=.055). Those who reported that long duration of the illness "sometimes" affected the patient's

desire to take their medications were (OR, .293; 95%CI; .094-.914; p=.034) times more compliant than those who stated “always or often”.

Investigators have questioned whether duration of illness is associated with medication compliance. Buchanan (1992) and Remington et al. (2007) found no association between duration of illness and compliance (Buchanan, 1992; Remington et al., 2007). While in other studies an association between higher non-adherence and longer length of illness was reported as the longer the duration of illness, the higher the chance of the patients drooping out of treatment (Lacro et al., 2002; Velligan et al., 2009; Novick et al., 2010).

The result of the current study revealed it to be an important factor for patients; therefore health care provider and family members should continuously encourage patients with schizophrenia to adhere to their treatment plan despite of short or long duration of their illness.

6.4.4. Treatment schedule

According to the findings of the current study (22.3%) of the participants took their medication once a day, (39.7%) took them twice a day while (36%) took them three times or more. Also, more than half of the patient (69.4%) indicated that “rarely or never” the frequent dosing of medication affected their desire to take their medications. Moreover, (72.3%) of the patients reported that taking their medications many times per day “rarely or never” made it difficult for them to remember taking them.

These findings were in agreement with the study that found that compliance does not seem to correlate with the number of drugs prescribed (Jin et al, 2008). Also, the logistic regression analysis showed no statistically significant relationship between daily number and daily drugs regimen and compliance rate. On the other hand several studies emphasized that taking tablets once a day increases regularity of intake (Porter 1969; Mendels and Schless 1977). For example, Razali and Yahya (1995) observed significantly improved compliance in schizophrenia patients if the medication was to be taken only once or twice daily. Also Claxton and Pierce (2001) reported when a single daily dose is prescribed, compliance is 79%; compliance is 69% for two doses per day, 65% for three doses, and only 51% when four doses per day are prescribed. The differences are significant between one or two versus three or four doses, but no significant difference was found between one and two or between three and four doses (Claxton and Pierce, 2001).

6.4.5. The patient-doctor relationship

The findings of the current study revealed a positive relationship between the patients and their treating doctors as the vast majority of them (97.3%) reported that the doctor “always or often” treated them with respect during the visit and (95.6%) stated that when they visited the center, the medical staff deals with them in a friendly way and with respect. The findings of the study were in consistency with the studies which revealed that the treating doctor’s behavior towards their patients, their understanding and respect of patients’ concerns, their willingness to provide all needed information and their empathy and trust shown to their patients are major factors in achieving a good level of compliance concerning the medical treatments of their patients. (Moore et al., 2004; Löffler et al., 2003). The findings are also supported by Lawson et al. (2005) who found that adherence

to medication is good when healthcare providers are emotionally supportive, giving reassurance or respect, and treating patients as an equal partner (Lawson et al., 2005).

Further, the findings of the current study revealed good communication between the patient and the doctor. For example (66%) of the patients reported that the doctor “rarely or never” hurried too much in order to finish the examination quickly while (20.7%) responded as “sometimes” also (90%) stated that the doctor “always or often” listens carefully to what they say. A possible explanation for this high result is that data collection of this study depended on a self-reported questionnaire so the participants may exaggerate their answer.

Good doctor-patient communication is important and has multiple impacts on various aspects of health outcomes. The impacts included better health outcomes, higher compliance to therapeutic regimens in patients, higher patient and clinician satisfaction and a decrease in malpractice risk (Shukla et al., 2010).

6.4.6. Clarity of instruction

The clarity of the instruction given to the patient regarding the usage of medication is another factor that could influence the commitment of the patient to follow their treatment plan. The findings of the study showed almost no complaints concerning this matter as the majority of the participants (95.7%) reported that the drugs-usage instructions were “always or often” clear, and (4.3%) reported that the instruction were ”sometimes” clear.

Although the logistic regression analysis in this study revealed that the clarity of the medical instructions did not affect the compliance rate. Findings found that clear and simple medical instructions given to patients had a significant effect on their compliance rate (Lewis and Bottomley ,1994; Hopkins et al., 2000; Vetter et al., 2014).

6.4.7. Family support

The current study findings showed that most of the participants had good family support concerning financial support, taking medication, seeking medication services and receiving encouragement to follow up their treatment. For example (88.3%) of the participants reported that their family members “always or often reminded them about their medications, (81%) stated also that their family members “always or often” helped them

financially to get their medications when needed, and (85.7%) indicated that their family members “always or often helped them in taking their medication. Further more (92%) said that their family members “always or often” encouraged them to be compliant with their medications and treatment plan. One possible explanation for this result is that the social structure of the Hebron community. Its social and religious values prioritize the role of the extended family in helping its family members who are in need by providing help and support particularly for sick people. Another possible explanation is that most of the participants are males and the majority of them are married so women take care of their husbands and encourage them to take their medication.

On the other hand, the logistic regression of the current study showed that family encouragement did not affect the compliance rate of the patients. This result is in consistency with the findings of Drury et al., (1976) who found that there was no significantly relationship between compliance rate and family support. Yet more studies haven proven otherwise by revealing that family and social support have the greatest influence on compliance. The availability of family or friends to help or supervise medications have been consistently associated good level of compliance (Seo and Min 2005; Löffler et al., 2003). Moreover, a study by Abu Rahma (2012) showed strong correlation between drug compliance and family support in preventing relapse among patients with schizophrenia.

6.4.8. Regularity on the follow-ups and the treatment plan

In general, the findings of the study showed high rate of follow up as the vast majority of the participants (90.3%) indicated that they were “always or often” regular on their doctor’s appointments. Also (61.7%) visited their physician every month and 33.3% visited their physician at least one time every three months while only 1% of them visited the doctor at least one time every six months. One possible explanation of the high commitment of the patients to their appointment is their easily access to the medical services in their place of residence and they receive their drugs and mental health services for free. Another possible explanation is that these patients perceive their illness as a problem that need medical intervention as mentioned previously and this may motivate them to follow up their medical visit with their doctors. Although the logistic regression of the findings of the current study showed that the frequency of doctor visit did not significantly affect the

compliance level of the participants. A study by Patel et al. (2005) have shown strongly the opposite; according to this study regularity on the follow ups and treatment plan are associated with high rates of compliance and patients who were regular on follow-ups had higher compliance rate than those who were not (Patel et al., 2005).

6.4.9. The costs

The final factor that this study explored is the cost of treatment. Cost is a major matter in patient's compliance especially for patients with chronic disease as the treatment period is long and can require a significant portion of a patient's income (Berghofer et al., 2002).

Although (99.7%) of the patients in this study reported that they took their medicine from primary health care centers, in which drugs are provided without cost to them from the Palestinian Ministry of Health; medications in these centers are not always available and so patients might need to buy them occasionally. For example (43.1%) of the participants reported that the amounts they paid to cover their medical needs are "rarely or never" reasonable, (22.3%) stated that as "sometimes" and (34.6%) answered with "always and often". Additionally (25.9%) reported that "always or often" they had worries about having to pay large medical bills. One possible explanation of this finding regarding the cost is the low rate of employment among them as (74.7%) were unemployed and (86%) of them were poor according the criteria of the Palestinian Central Bureau of Statistics (2007).

Further, when participants were compared according to their level of education, those with high level of education were the least to have a problem with the cost (p=0.00). For example (63.9%) of those who got university versus (40%) of the non-educated participants stated that they "rarely or never" had a problem to cover their share of costs. One possible explanation is 55% of those holding university degree were earning more than 2001 NIS a month versus 30.3% of the none educated and 20.7% of the none educated were without income at all versus 0% of those with university degree.

Previous studies such as Velligan et al. (2009) reported that predictors of non-compliance included a disorganized or chaotic living standard, financial problem, housing problems and logistic problems. Similarly, Baby et al. (2008) showed that financial problems of the patients had a significantly and adversely effects on patient's compliance with their treatment plan.

6.5. Conclusion

Non-compliance is a crucial factor that effects the treatment of patient with schizophrenia. Non-compliance has multiple factors that alone or in varying combinations are likely to be operative in individual cases. A comprehensive understanding and integration of patient, illness, treatment and environmental factors are needed to manage noncompliance (Kane, 1989).

This study may be the first study in Palestine assessing the compliance rate of patients suffering from schizophrenia with their anti-psychotic medication. In general, the findings of this study showed high level of compliance as 95.3% of the participants had no hospital admissions, 89% had no increase in the number of medication, and 93.3% had no increase in the dose of medication.

Also the result of this study revealed that the availability of participant's family support, clarity of the drugs-usage instructions and the good relationship between the patients and the medical staff, patients' regularity on appointments and follow ups, the cost of treatment and the duration of illness play an important role in increasing the level of compliance with anti-psychotic mediation of the patients with schizophrenia. On the other hand, findings showed weaknesses in some aspects such as patient's knowledge about their disease.

Moreover, the logistic regression analysis of the study revealed statistically significant relationship between duration of illness, level of insight and the stigma of the illness. However, gender, age, place of residency, marital status, educational level, work status, income status, number of drugs regimen, daily drugs regimen, regimen interruption, number in change of medication, frequency of doctor visits, clarity of instruction, family support and encouragement as well as medication side effects did not have a relationship with compliance rate.

6.6. Section four: Limitations and recommendations

6.6.1. Recommendation

The findings of this study suggest the following recommendations for the treating medical staff, the Palestinian Ministry of Health and for the research that may help increase patient's compliance rate with their anti-psychotic medication.

Recommendations for the medical staff

Clinicians in primary care and psychiatric settings need to be vigilant for signs of adherence problems among their patients and to act when necessary to prevent or alleviate the consequences of inadequate medication cover. Relapse prevention strategies, particularly for patients with early psychosis, should include ensuring that medication lapses are minimized or eliminated through:

- Patients should be educated about their disease (including risk factors, etiology, treatment, possible complications) through conducting seminars, workshops, and individual counseling. Also, patients with low literacy should be provided with pictorial and audiovisual educational material instead of written instructions.

- Patients' misconceptions must be evaluated and corrected. Information given to the patients must be relayed to patients at their level, with access to time for questions and patients should be able to repeat back instructions in their own words in order ensure comprehension.

- Patients should be monitored for physical health problems that occur in psychiatric settings.

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Recommendation for research

- Researchers need to do more research involving other patients from different cities in the West Bank and the Gaza Strip, in addition to patients from different settings, such as governmental, UNRWA, NGOs, and private sectors.

- Future research needs not only to investigate the patient's perspective but also the perspective of health care providers and the families of the patients to assess the possible factors affecting patients' compliance.

- Further research needs to assess the validity of information in the medical files of patients with schizophrenia.

- Additional qualitative in-depth research about factors affecting compliance rate of patients with their antipsychotic medication should be done.

- Further research on compliance to be done with patients with high relapse rate.

Recommendation for the Palestinian Ministry of Health

- Guarantee providing all necessary anti-psychotic medication for free.

- Organize trainings and seminars for medical staff in clinics to increase their awareness about the factors affecting compliance rate of patients suffering from schizophrenia.

- Increase patients, family and community knowledge through public health campaigns focused on prevention and management of schizophrenia by using brochures, posters, TV segments, etc. These interventions will also help to reduce stigmatization of the illness.

- Improve in job skills of patients with schizophrenia and provide rehabilitation programs, which will lead to better income, better self-esteem, and better social status which will help integrate the patient back into the society.

- Support NGO's that provides mental health services in the community by addressing the problem of compliance in patients with schizophrenia.

- Design recreational programs to help patients develop social skills and learn to participate in leisure group activities specially with their families.

- Promoting cooperation between modern and traditional medicine because alternative medicine is widely used amongst Palestinian, and therefore there is potential to educate both traditional healers and religious and spiritual advisors on common mental disorders.

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Abstract

Background

Non-compliance to anti-psychotic medication is a world wide problem and may be the most challenging aspect of treatment of patients with schizophrenia as it contributes to relapse and re-hospitalization of the patients.

Aim

The aim of the current study is to assess the compliance rate of patients with schizophrenia with their anti-psychotic medication and to identify factors that affect their compliance rate in Hebron Community Mental Health Center for Adults (Beit-Kahel).

Methods

A cross-sectional design was utilized to achieve the purpose of the study. The data collection process was done by using a self-reported questionnaire that consisted of ten sections including socio-demographic data, medical history, patient's knowledge and perception, duration of illness, treatment schedule, patient-doctor relationship, clarity of instruction, regularity on the follow ups, family support and cost of treatment. The questionnaire was filled in by the main researcher and another research assistant for 300 patients attending the Hebron Community Mental Health Center for Adults (Beit-Kahel) who met the inclusion and the exclusion criteria and agreed to participate in the study. The Data collection process was done from 01.04.2012 until 1.12.2012. Moreover, compliance rate was estimated by using the relapse rate. The relapse rate was assessed by using re-hospitalization, increase in the number of medication, increase in the dose of medication and worsening of symptoms.

Data analysis

Statistical analysis was performed using a statistical package for social sciences (SPSS) Version 20. Descriptive statistics, the Chi-square and fisher exact test (p-

value≤0.05) were used to analyze the data. Also primary logistic regression was used to examine the association between re-hospitalization and some independent variable

Results

Analysis of the patients' characteristics showed for example that the patients' age ranged between 18-76 years of which 41.7% aged from 31 to 45 years. Regarding their gender, 67% were males and 33% were females. Also, more than half of the participants (59.7%) were married and 74.7% were unemployed.

In addition, the main results of the current study revealed good compliance rate with anti-psychotic treatment plan among patients with schizophrenia. For example, 95.3% of the participants had no hospital admissions, 89% had no increase in the number of medication, and 93.3% had no increase in the dose of medication.

Moreover, the findings in general revealed that the patients have good family support and encouragement and positive relationship with the treating doctor. They also showed a variation in their knowledge about their disease and the majority (95.7%) indicated that the drugs' usage instructions were "always or often" clear and simple.

The logistic regression analysis of the study population revealed a significant relationship between compliance rate and duration of illness, stigma and insight. On the other hand gender, age, place of residency, marital status, educational level, work status, income status, number of drugs regimen, daily drugs regimen, regimen interruption, number in change of medication, frequency of doctor visits, clear of

instruction, family support and encouragement and medication side effects did not have a relationship with compliance rate.

Conclusion

The findings of the current study revealed high compliance rate with anti-psychotic medication among patients with schizophrenia in Hebron district. This might be related to the patient's good family support and encouragement, positive relationship with the treating doctor, and to clear and simple drugs' usage instructions.

التي العوامل

ملخص الدراسة

خلفية الدراسة

تعتبر مشكلة عدم إلتزام مرضى الفصام بالخطة العلاجية الدوائية مشكلة شائعة، وقد تكون التحدي الأكبر في العملية العلاجية لمرضى الفصام، كما أنها تساهم في الانتكاسة المرضية وإعادة الاستشفاء.

هدف الدراسة

أجريت الدراسة الحالية من اجل تقييم مدى إلتزام مرضى الفصام بالخطة العلاجية الدوائية، وكذلك البحث عن العوامل التي تؤثر في مدى التزامهم بتلك الخطة في مركز بيت كاحل للصحة النفسية في مدينة الخليل.

منهجية الدراسة

إستخدمت دراسة كمية مقطعية من أجل تحقيق هذا الهدف .جمعت المعلومات اللازمة للدراسة بواسطة إستبيان مقسم الى عشرة بنود وهي :معلومات اجتماعية عامة، والتاريخ المرضي، ومعلومات عن المرض ونظرة المريض اليه، وفترة المرض، والجدول العلاجي، وعلاقة المريض بالطبيب المعالج، ووضوح تعليمات العلاج، والإنتظام في المواعيد، ودعم العائلة للمريض، وتكاليف العلاج .استخدم الباحث عدة طرق مختلفة لقياس مدى إلتزام المشاركين من خلال إعادة الإستشفاء، وزيادة في عدد الأدوية، وزيادة في كمية الدواء، وزيادة في شدة الأعراض .تم جمع بيانات مدى الإلتزام من خلال ملفات المرضى بالرجوع إلى ثلاثة أشهر من تاريخ تعبئة الإستبيان في الفترة الواقعة ما بين ١. / ٢١١٢ /١٢ ولغاية ١/ ١ /٢١١٢. قام الباحث الأساسي مع الباحث المساعد بتعبئة الإستبيان ل ٣١١ مراجع من مركز بيت كاحل للصحة النفسية، ممن استوفوا شروط المشاركة في هذا البحث في الفترة الواقعة ما بين ١ /٤ /٢١١٢ ولغاية ١٢/٢١١٢.

التحليل الإحصائي

إستخدم برنامج الرزم الإحصائية للعلوم الإجتماعية (SPSS) لتحليل العينة، حيث استعملت النسخة ٢١ من هذا البرنامج. كذلك إستخدم التحليل الوصفي، بالإضافة إلى الكاي المربع (X^2) وفشر المضبوط (fisher exact test) مع درجة دقة ≥ ١.١٥ (p-value ≤0.05) لتحليل المعلومات .كما إستخدم تحليل الإرتداد اللوجيستي من أجل فحص العلاقة بين إعادة الإستشفاء وبعض المتغيرات التابعة.

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النتائج

أشارت بعض تحليل بيانات المرضى إلى أن أعمارهم تراوحت ما بين ٦٧ ١١ ، سنة وان ٦.٤١ % منهم تراوحت أعمارهم ما-

بين ٣١ و ٤٥ . أما بالنسبة للجندر فقد كان ٧٦ % منهم ذكورا بينما ٣٣ % كانوا من الإناث .أكثر من نصف المرضى ٦.٥٧)% كانوا متزوجين، ٦,٦٤ % منهم عاطلين عن العمل .أيضا أظهرت النتائج الرئيسية لهذه الدراسة بأنه)

يوجد التزام جيد لمرضى الفصام بالخطة العلاجية إذ أنه ٣.٧٥ % من المشاركين في الدراسة لم يدخلوا المستشفى، و ١٧ % لم

يكن لديهم زيادة في عدد الأدوية، و ٣.٧٣ % لم يكن لديهم زيادة في كمية الدواء خلال الثلاث الأشهر السابقة.

من جهة اخرى أظهرت النتائج أن المرضى المشاركين في الدراسة يتمتعون بشكل عام بدعم وتشجيع جيدين من العائلة، وكذلك لهم علاقة ايجابية مع الطبيب المعالج لهم في العيادة، وأظهرت النتائج أيضا وجود تفاوت في مدى المعرفة لديهم بما يتعلق بمرضهم .كما أن معظم المرضى (٦.٧٥)% قالوا إن التعليمات الخاصة بالعلاج كانت" دائما وغالبا "سهلة وواضحة بالنسبة لهم.

بين التحليل اللوجيستي الإرتدادي الثنائي أن هناك علاقة ذات دلالة إحصائية بين الإلتزام بالخطة العلاجية وطول فترة المرض، والشعور بوصمة العار من المرض، والإستبصار .ولكنه بين أيضا بأنه لا يوجد علاقة ذات دلالة إحصائية بين الإلتزام بالخطة العلاجية وجنس المريض، وعمره، ومكان السكن، والحالة الإجتماعية، ومستوى التعليم، والعمل، والدخل الشهري، وعدد الأدوية، وتكرار زيارة الطبيب، ودعم العائلة، ووجود أعراض جانبية للأدوية، وعدد مرات أخذ الدواء في اليوم، وعدد مرات عدم الإلتزام بالخطة العلاجية.

الخاتمة

أظهرت نتائج الدراسة مستوى إلتزام جيد بالخطة العلاجية الدوائية لدى مرضى الفصام في محافظة الخليل، وقد يعود هذا الإلتزام الجيد لكون المرضى المشاركين في الدراسة يتمتعون بشكل عام بدعم وتشجيع جيدين من العائلة، وكذلك لهم علاقة ايجابية مع الطبيب المعالج لهم في العيادة، وان التعليمات الخاصة بالعلاج كانت سهلة وواضحة بالنسبة لهم.