THE EFFECTIVENESS OF PSYCHOEDUCATION INTERVENTION ON MEDICATION ADHERENCE IN BIPOLAR DISORDER

A Systematic Review

Presented to the faculty of the School of Nursing

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Submitted in partial satisfaction of the requirements for the degree of

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in

Nursing

Psychiatric Mental Health Nurse Practitioner

by

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Abstract

of

THE EFFECTIVENESS OF PSYCHOEDUCATION INTERVENTION ON MEDICATION ADHERENCE IN BIPOLAR DISORDER

by

Elaine Ocampo

Statement of Problem

Patients with bipolar disorders do not adhere to medications causing recurrence of symptoms and worsening progression of the disease. Psychoeducation is a common intervention by which patients with BD are taught about their disease process and ways to cope with their symptoms and disease. A systematic review of current research was conducted to evaluate the effectiveness of psychoeducation as an intervention and its effect on medication adherence in patients with bipolar disorder.

Sources of Data

PsycINFO, CINAHL, and PubMed were used for the systematic review. Key search terms used were, “psychoeducation bipolar disorder,” “bipolar disorder intervention,” “bipolar adherence,” “bipolar medication,” “bipolar disorder,” and “bipolar non adherence.” The reference lists of studies were also reviewed to identify additional studies meeting the inclusion criteria.
Conclusions Reached

Five studies showed statistically significant evidence that psychoeducation intervention is effective in increasing medication adherence in patients with bipolar disorder. The studies took place outside of the United States and were in the countries of Iran, Spain, and Turkey. Additional findings from the studies report that an increase in medication adherence associated with the psychoeducational intervention also led to a decrease in the length and frequency of psychiatric hospitalization, decrease in relapses into mania or depression and an improvement in quality of life. Psychoeducation holds the potential of being considered an evidence based intervention and gold standard for treatment of patients living with BD. Psychoeducation is an intervention that nurses, physicians, or therapists can effectively implement.

Dr. Nancy Caffin Romig, DNSc, PMHCNS-BC

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Chapter 1
INTRODUCTION

Mental illness has touched the lives of many individuals, either personally or indirectly through caring for a family member or friend with mental illness. According to the National Alliance for Mental Illness (2013) one in four adults experience some form of mental illness. The CDC reported that compared to heart disease or cancer, there is higher prevalence of disability due to mental illness (2011). Some patients who may view mental illness as an impediment to living a productive and functional life. Mental illness can influence many aspects in an individual’s life including family dynamics, ability to have relationships, hold down a job, or financially support oneself. Conversely, there are some individuals who are able to view their mental illness as a part of them that strengthens them, knowing that they are able to manage their chronic illness. This dynamic shift in perception and ability to live a productive lifestyle can come with support from others in understanding how to cope with mental illness.

According to Kesler, Bergland, Demler, Jin, & Walters (2005) bipolar disorder (BD) is a chronic, disabling type of mental illness that affects 2.6% of the United States population in individuals 18 and older. The American Psychiatric Association defines BD as a psychiatric illness in which patients have a combination of episodes of depression or periods of low energy and loss of pleasure, and mania or periods of elation, increased energy, and decreased need for sleep (2013). The Diagnostic and Statistical Manual of Mental Disorders identify four subtypes of BD: bipolar I, bipolar II, cyclothymic, and BD not otherwise specified (APA 2013). Marchand (2003) reports that
the main hallmark of Bipolar I disorder is at least one episode of full-blown mania while Bipolar II disorder occurs when an individual experiences hypomania, or symptoms that are less severe than full-blown mania. Cyclothymic disorder occurs when an individual experiences periods of hypomania and depression, but the period of depression do not meet criteria to be considered a depressive episode (Phillips & Kupfer, 2013). Phillips and Kupfer add that a patient can be diagnosed with BD not otherwise specified if there is rapid cycling between depression and hypomania. A patient with a diagnosis of BD not otherwise specified may not yet meet full criteria for the diagnosis of Bipolar I, Bipolar II disorder, or cyclothymia. The term BD is inclusive of all four subtypes of BD in this review.

Among all of the forms of mental illness, BD is considered one of the most severe. Phillips & Kupfer (2013) found that BD is considered as “one of the ten most debilitating of all non-communicable disease” (p.1663). This is postulated due to the variability in functioning that occurs with BD. Oftentimes, individuals who are experiencing mania or hypomania are not able to identify their symptoms. Some patients enjoy the creative output that comes with mania. However marked impulsivity, agitation, or reckless behavior associated with BD can impair judgment, leading to risk of danger to self or others, or making decisions that can have painful consequences. Depression is more severe in patients with BD increasing the likelihood of suicide due to the drastic change in mood state from mania to depression. Understanding the chronicity of the disease, recognizing triggers for manic or depressive symptoms, identifying early
warning signs of impending mania or depression, as well as medication adherence are all essential in management of BD.

Due to the severity of symptoms of BD coupled with preconceived notions about having mental illness, patients with BD may conceal their disease. Crowe et al., (2012) put forward that because of this tendency to conceal patients will be less likely to pursue long-term treatment for their chronic condition. Stigma can be detrimental towards the recovery of patients with BD, and can contribute to denial of having a chronic illness. Stigma comes not only from preconceived notions from society labeling those with BD as “crazy,” but can also come from health care professionals. Providers may see the words “bipolar disorder” on patient records and attribute all physical health symptoms to having BD. Through time a patient with BD may feel like a pariah of society being treated as a bipolar patient rather than a patient with bipolar disorder. This shame ultimately contributes to a patient with BD to live in denial or conceal their illness.

Psychoeducation can be beneficial for patients living with a chronic condition. Crowe et al. (2010) has found that of all the psychosocial interventions available to improve medication adherence in patients with BD, psychoeducation is the most easily implemented by mental health nurses. The basic definition of psychoeducation according to Sajatovic et al. is “the act of providing relevant information to individuals about their illness and treatment” (2007, p. 186). It is important for individuals living with a chronic condition to understand their disease in order to take an active role in the management of their disease. Lukens & McFarlane (2004) put forward that psychoeducation is considered an evidence-based treatment associated with an improved quality of life,
reduction in symptoms, and improved functioning for both patients and families coping with mental illness. Psychoeducation can be used with patients with BD for building self-efficacy in the long-term management of their illness by teaching patients to manage their symptoms.

Cakir et al. (2009) believe that psychoeducational groups educate individuals with BD about the importance of maintaining balance and lifestyle regularity by eating healthy and being aware of prodromal signs of the disease. Reilly-Harrington & Sachs (2006) add that empowering patients to understand their illness, recognizing symptoms, and strategies to regulate their mood, and identifying relapse warning signs are central themes while in psychoeducation groups.

The psychoeducational groups also teach patients how to cope when they experience prodromal symptoms of their illness. Awareness of prodromal symptoms is important in order for patients to seek out early assistance from their family or mental health provider, preventing acute manic symptoms that lead to hospitalization. Patients also learn how to manage side effects to their medications. Pros and cons of medication adherence are presented enhancing an individual’s perceived sense of self-control (Sajatovic et al., 2007). An important facet in psychoeducational groups is to empower patients to build a sense of self-efficacy that they will be able to manage their illness on their own.

Timing is essential for the intervention to be successfully implemented. Patients will benefit more from the intervention when they are in a euthymic state. This means that they cannot be severely depressed or meet current criteria for acute mania while
receiving the intervention. Stafford & Colom (2013) believe that patients who are in acute crisis or having current symptoms may not benefit until symptoms are stabilized. When a patient is in a euthymic state, they are more likely to benefit from educational sessions, participate in their treatment plan, and participate in a structured group setting (Scott, Colom, & Vieta, 2007). The progress of a patient needs to be assessed regularly during psychoeducational sessions (Colom, 2011). Patients needing more reinforcement in a particular topic presented in a psychoeducational session, such as identifying prodromal symptoms for instance, will have their individual needs addressed.

Long-term psychoeducation of six months in duration has been shown to decrease hospitalization and decrease amount of days spent in a hospital setting for up to two years compared to patients who never received non-structured group psychoeducation (Colom, Vieta, & Martinez-Aran, 2003). At two and five year follow up the number of episodes of manic, depressive and mixed episodes were lower in those who received the intervention than those who did not (Colom et al., 2003; Colom, Vieta, & Sanchez-Moreno, 2009).

Medication adherence coupled with an individual’s understanding of BD and ongoing support from treatment providers through psychoeducation intervention will increase the likelihood of long-term management of the disease. Cakir et al. (2009) believe that psychoeducation intervention is most effective when used in conjunction with pharmacotherapy. Stafford & Colom (2013) cite evidence that group-based psychoeducation as an add-on to maintenance pharmacotherapy is effective in preventing recurrence of acute symptoms because of medication adherence.
Horne (2006) defines adherence as the extent of an individual’s behavior to take the agreed recommendations of a prescriber. Col, Caykoylu, Ugurlu and Ugurlu (2014) define adherence as an individual’s conformity to accepting treatment proposal of clinician and acceptance of their health status. Studies examined in this review use the terms compliance and adherence as the outcome to measure effectiveness of psychoeducation intervention. For the purpose of this review, both medication compliance and medication adherence will be presented as medication adherence.

An emphasis on agreement between the patient and the prescriber is paramount in ensuring that a patient is medication adherent. Although a provider may spend an a great deal of time with a patient providing psychoeducation and articulating the importance of medication adherence, ultimately it is up to the patient to choose if he/she will adhere to the treatment recommendations of the provider. Some patients choose to be non-adherent despite the fervent efforts of providers to teach them about health promotion and illness management. Crowe et al. (2011) define non-adherence as not taking medications as ordered, adjusting doses based on current symptomology instead of taking medications ordered for prophylaxis, and ceasing medications without consulting the prescriber.

There are many risk factors that predispose an individual with BD to be non-adherent to their medications. These factors include “demographic and clinical variables, individual psychological, social reasons, health beliefs, treatment related factors, clinician patient relationship, and cognitive and neuropsychological deficits” (Sajatovic et al., 2007, p. 184). Colom et al. (2003) add that predictors for medication non-adherence include comorbid alcohol or drug abuse, personality disorders, and severe or psychotic
symptoms. Patients who have a history of being non-adherent to medications in the past are more likely to be non-adherent in the future. Since mood symptoms related to BD may be well managed with medications, patients may believe that they have been cured from their chronic condition and stop taking their medications. Unfortunately in doing so, the unrelenting symptoms of BD return. When this occurs, medication management is aimed at crisis management and stabilization, rather than geared towards health promotion and maintenance, as it is when the patient is medication adherent.

Bipolar disorder is a chronic mental illness that, when left untreated, can be debilitating and progressive in nature. Management of the illness is life long and medication adherence is essential in management of the disease. Psychoeducation as an intervention is vital in management of bipolar disorder. The intervention teaches those with BD about their illness, identifying prodromal symptoms or triggers, gain acceptance of the illness, and the impact of medication adherence. Having gained insight into their illness, patients will be empowered to manage their illness effectively on their own. They will be able to lead happier, successful, and productive lives while managing their chronic illness.
Chapter 2
Problem

Phenomena and concepts explained and defined

Medication adherence is paramount in the management of chronic disease. The World Health Organization (2003) has found that only 50% of patients living with a chronic illness are adherent with their medication regimen. Individuals with BD believe that because their symptoms have improved, they no longer have to take their medications. They do not understand that their symptoms have been managed as a result of adhering to their medications.

Crowe et al. (2011) report the rate of non-adherence to mood stabilizers in patients with BD is increasing. Sajatovic et al. (2007) found that nine out of ten individuals with BD have considered no longer taking their medications. Sajatovic et al. (2007) add that at least one third of individuals do not take more than 70% of their prescribed medications and the median rate of non-adherence is 41%-42%. The goal of maintenance treatment is prophylaxis (Crowe et al., 2011). Marchand (2003) argues that even with prophylactic medications in BD, there is still a 40% relapse rate in one year, 60% in the second year and at 73% thereafter.

Medication non-adherence has been linked to poor clinical outcomes and increased costs (Eker & Harkin, 2012; Sajatovic, Velligan, Weiden, Valenstein, & Ogedegbe, 2010). Non-adherence is also one of the common reasons for hospital readmission (Gianfrancesco, Satatovic, Rajagopalan, & Wang, 2008). Patients who do not adhere to their medications are unable to identify hypomanic symptoms that are
precursors to acute mania or severe depression. Gianfrancesco et al. (2008) adds that there is a 42% increase in hospitalizations in patients who do not take their medications regularly compared to patients who do. A patient’s family or friends may identify concerning or erratic behaviors, yet the lack of insight characteristic of mania will prevent a patient from identifying the need for early intervention. It is unfortunate that the intervention eventually occurs in a hospital setting when the patient has already engaged in risk taking behavior, increasing the likelihood of longer periods of hospitalization or compulsory, involuntary commitment (Eker& Harkin, 2012).

When patients choose not to be adherent to medications, there are many consequences for the patient and family. Consequences include inability to hold a steady job, increased morbidity, and suffering. According to Vieta et al. (2012), non-adherence of medication increases the direct costs of employers due to short-term disability, multiple absences, or workers compensation. Vieta et al. (2012) believe that although medications may be effective for managing acute symptoms of mania and/or depression, many patients do not have functional recovery unless they adhere to their medication regime. Patients with BD struggle to understand that mood stabilizers need to be continued even if symptoms improve or resolve.

Marchand (2003) states that one of the main reasons patients with BD do not adhere to their medications is to avoid bothersome side effects of mood stabilizers that include nausea, diarrhea, tremor, akathisia, memory loss, and most commonly weight gain. Some discontinue medications on their own rather than discussing with their provider alternative medications or use of additional medications to reduce side
effects (Gibson, Brand, Burt, Boden, & Benson, 2013). Keck, McElroy, and Strkowski (1996) found in their study that non-adherence to medications was prevalent in majority of individuals being treated in a psychiatric ward for acute mania.

Another reason patients do not adhere to medications is feelings of denial, isolation, and shame. Some feel like they will be stigmatized if others know they have BD. These feelings can significantly affect the ability of a patient with BD to accept that their condition is chronic and debilitating in nature if left untreated. Accepting that medication is needed for a lifetime to control mood state is difficult. Using the Reasons for Stopping Medications Questionnaire, Sajatovic et al. (2002) found that 48% of patients with BD stopped taking their meds because they did not want to believe they have a chronic illness, 45% believed their medications were controlling their mood, and 33% thought taking medications was a hassle.

The body of evidence clearly identifies medication adherence as vital in the management of bipolar disorder. Due to positive impact medication adherence has on managing BD, it is crucial to find interventions that are effective at enhancing medication adherence. The impact of examining if psychoeducation can be considered as an evidence-based intervention to increase medication adherence is valuable in the treatment of BD.

**Theoretical Framework**

The Goal Attainment Theory (Figure 1) as described by Imogene King (2007), explains that an interaction exists among personal systems, interpersonal systems, and social systems. In King’s model, health is defined as “the dynamic life experiences of a
human being which implies continuous adjustment to stressors in the internal and external environment through optimum use of one's resources to achieve maximum potential for daily living and the ability to function in social roles” (Hanucharumkul, 1989, p. 367). King’s Model is illustrated through her Conceptual Systems for Nursing. Her conceptual model can be applied to psychoeducation to increase medication adherence in patients with BD. An optimum state of health can empower a patient with BD to regulate their internal environment using tools for coping with their disease through psychoeducation. When an individual with BD is able regulate their internal environment, he/she will be able to gain acceptance of his/her illness improving medication adherence. Nurses play an important role in helping patients regulate their internal environment, predominantly through support, understanding, trust, and instillation of hope.

Achieving homeostasis within the internal environment increases the likelihood of functionality in their external environment. The individual will be able to have meaningful interpersonal relationships with family members, friends or co-workers. When an individual is able to regulate their internal and external environments, they are able to shift perception of themselves and find meaning in their lives. They will be able to make contributions to society by ability to hold down a job or by sharing their experience with BD with others living with the condition.
Having a diagnosis of BD can affect an individual’s perception of self. Some individuals believe that their BD defines them and have difficulty distinguishing their sense of self from their disease (Crowe et al., 2012). Shifts in mood states and perception of the disease play a role in their ability to control their disease (Crowe et al., 2011). Empowerment and building a sense of self-efficacy is at the core of psychoeducation (Sajatovic et al., 2007). Help is needed in early recovery with decision making and building coping mechanisms. In order to get help, the walls of shame, denial, and pain that patients with BD experience need to be broken down. Shame and denial are powerful feelings that prevent an individual with BD from seeking treatment or even being forthcoming to non-mental health care providers that they were diagnosed with BD.

Sajatovic, Davies, & Hrouda (2004), postulate that the most important factor for medication treatment adherence is the relationship of a patient with their treatment.
provider. Nurses spend more time with patients than any other health care providers. Sajatovic et al. (2004) found in their qualitative study that the key factor for medication management and adherence is the perceived relationship a patient has with their provider. It is paramount the nurse and the patient build a trusting relationship and that the nurse respects the patient’s decisions regarding treatment (Crowe, Wilson, O’Brien, & Joyce, 2012). The reciprocal trust, empathy and understanding between a nurse and patient with BD has a significant impact on medication adherence as patients are more likely to be willing to listen to someone they feel sincerely cares about their recovery and well-being.

**Problem Statement**

This systematic review addresses the problem of medication adherence in patients with BD. Non adherence to medications can significantly impact the lives of patients with BD in multiple ways. The severity of manic and depressive symptoms related to non-adherence to medications can cause stress in the individual’s family, damage relationships, and can cause an individual to make impulsive decisions. Lack of insight and knowledge that their disease is chronic increases the risk of relapse into a more acute state. Psychoeducation as an intervention for patients with BD educates patients about their illness and strives to increase medication adherence. The aim of this systematic review was to identify studies that determine the effectiveness of psychoeducation as an intervention to increase medication adherence in bipolar disorder.
Significance to Nursing

A qualitative study performed by Goosens et al. (2008) found that nurses report non-acceptance of BD serves as an impediment to adherence. These patients often have the hope they will be cured of the disease despite their provider telling them that BD is a chronic condition (Goossens et al., 2008). Long-term medication adherence in BD is not feasible until the patient accepts their disease and fully believes that it is necessary (Cakir, Bensusan, Akca, &Yazici, 2009). The expectations of treatment significantly impact the patient’s receptivity towards medication adherence (Clatworthy et al., 2009).

Nurses play an essential role in implementing psychoeducation. Nurses can effectively deliver teaching to patients about medication adherence through reinforcing behaviors on managing their chronic illness and the reinforcing the importance of long-term adherence. Additionally nurses monitor effects of medications, request serum levels for mood stabilizers from a psychiatrist, and report laboratory values. A qualitative research study conducted by Goosens et al. (2008) has shown that patients with BD are more forthcoming and honest with nurses in an outpatient setting regarding their symptoms compared to psychiatrists. Nurses spend more time with patients than other disciplines and are able to observe behaviors more closely. Active listening and emotional support provided by nurses increases patient’s willingness to engage in psychoeducation.
Mental health nurses have experience, skills, and knowledge of how to work with patients with BD. The findings of this review can change clinical practice by providing evidence on the effectiveness of psychoeducation on medication adherence for patients with bipolar disorder. Currently, there are few clinics that offer psychoeducation for patients with BD. Crowe et al. (2012) put forth that there is a growing amount of research to assess the effectiveness of psychoeducation. If psychoeducation is found to be an effective intervention, psychoeducation may become standard plan of care for patients with BD.

**Research Study Question**

This systematic review was guided by the following research question, “Does psychoeducation intervention have an effect on medication adherence in patients with bipolar disorder?” Evaluating the effectiveness of the intervention will determine if the intervention can be considered as evidence based practice to increase medication adherence in patients with bipolar disorder.
Chapter Three

Search Strategy Methodology

The purpose of this systematic review was to identify, appraise, and grade the evidence of effectiveness of psychoeducation on medication adherence in bipolar disorder. The databases used to retrieve studies on psychoeducation as an intervention were: PsycINFO, Google Scholar, CINAHL, and PubMed. The following search terms were used to identify studies on psychoeducational interventions: “psychoeducation and bipolar,” “bipolar and medication,” “bipolar and adherence,” “bipolar and medication psychoeducation,” and “bipolar and medication adherence and psychoeducation.” Studies published between 2000 to 2014 were retrieved and reviewed to determine if they met inclusion and exclusion criteria. There were 1,142 studies retrieved using the search terms listed above. Once the duplicates were removed, there were 877 studies remaining. Titles of the 877 studies were reviewed. Two hundred and seventy seven studies met the inclusion criteria of being a quantitative study, meta-analysis or systematic review, published in the English language, participants between the ages of 18-65 and the psychoeducation intervention was implemented in an outpatient setting. The abstracts of the 277 studies were reviewed to determine if the remaining inclusion criteria were met. Of the 25 studies that were remaining, five full text studies met all the inclusion criteria. In order to ensure all studies were included in this review, the reference lists of the five remaining studies were reviewed. Fifteen articles possibly met inclusion criteria. After careful review, the fifteen articles obtained from the reference lists of the five studies
retrieved were either duplicates or did not meet inclusion criteria. Five full text published studies were selected for full review to determine if psychoeducation intervention was effective in medication adherence in patients with bipolar disorder.
Chapter 4
The Sample

Selection Criteria

Studies were identified from the databases used for this review and included articles that used psychoeducation as the only intervention being evaluated in the study. Studies need to have medication adherence as a dependent variable measured separately from other dependent variables used in the study. Key words “medication adherence,” “psychoeducation,” “bipolar disorder,” or “effectiveness of psychoeducation” were entered in the databases to retrieve published studies. Search terms were combined in order to limit the amount of articles to evaluate for inclusion in this review. Combination words that were used were, “psychoeducation bipolar,” “bipolar medication,” “bipolar adherence” and “bipolar medication psychoeducation,” and “bipolar medication adherence psychoeducation.

Inclusion Criteria. Quantitative studies, meta-analyses, and systematic reviews were included. Studies conducted in different countries were included but required to be in the English language. Participants in the study were required to be between the ages of 18-65. The psychoeducation intervention had to be implemented in an outpatient setting. Studies investigating more than one dependent variable were included if findings on the effectiveness of psychoeducation on medication adherence were reported separately from other outcome variables.
**Exclusion Criteria.** Studies measuring the outcome of psychoeducation in combination with other forms of psychosocial intervention were excluded. Studies involving family as part of the intervention were excluded in order to limit findings to the direct effect of psychoeducation and medication adherence in patients. Studies with participants in crisis or inpatient hospitalization units were excluded.
Figure 2. PRISMA Flow Chart of Systematic review

Identification

Databases: PsycINFO, Google Scholar, CINAHL, and PubMed
# of Articles = 1142

# of records after duplicates removed = 877

Screening

# records of titles and abstracts screened = 277

# of records excluded = 249

Eligibility

# of full text articles assessed for eligibility = 25

# of full-text articles excluded due to using psychoeducation intervention in combination with other psychosocial interventions or that do not have medication adherence as outcome variable = 20

Included

# of studies included in systematic review = 5

# of reference lists reviewed = 15
Chapter 5

Quality Appraisal

The five studies that were examined in the review show statistically significant results that psychoeducation intervention increases medication adherence in euthymic patients between the ages of 18-65 when delivered in an outpatient setting. The five studies included in the review varied in the length of time the intervention was implemented, but all five studies found the intervention effective. The studies conducted by Colom et al., (2003) and Colom et al., (2005) used the Barcelona Psychoeducation Program that consisted of 21 weekly psychoeducation groups that lasted 30-40 minutes each session. The study by Javadpour et al., (2013) administered eight 50-minute weekly psychoeducational sessions. Eker & Harkin (2012) implemented psychoeducational groups over a period of 6 weeks, for two hours each week. Dogan & Sabanciogullari, (2003) implemented the psychoeducational groups twice, 1 week apart for 45 minutes each. Despite the variation in the length of the psychoeducation sessions, all studies found the intervention effective at increasing medication adherence.

Strengths

The five studies identified in this systematic review measured medication adherence as one of the dependent variables with the intervention and psychoeducation as the independent variable. Studies included in this systematic review measured the outcome variable of medication adherence using the following instruments: Medication Adherence Rating Scale (Javadpour et al., 2013; Eker & Harkin, 2012). The Medication Adherence Rating Scale is a questionnaire of ten self-report items of non-adherent
behaviors (Fialko et al., 2008). Participants indicate their level of adherence in each of
the ten items answering ‘yes’ or ‘no’ on how often they engage in one of the behavior
indicated. Each yes was considered 1 point and values 0-7 indicated low levels of
adherence (Clatworthy et al., 2009).

Colom et al. (2003) drew serum blood levels of the mood stabilizers valproate or
carbamezapine to measure medication adherence. Colom et al. (2005) used the
measurement of serum lithium levels to measure medication adherence drawn at the
beginning of the study and at six, twelve, eighteen, and twenty-four months after
initiation of psychoeducation intervention. Dogan & Sabanciogullari (2003) used serum
lithium levels in the beginning of intervention and three months combined with other
instruments.

Studies meeting the inclusion criteria were conducted outside the United States.
Two of the studies were conducted in Spain (Colom et al., 2003; Colom et al., 2005). The
studies conducted by Eker & Harkin (2012) and Dogan & Sabanciogullari (2003) were
conducted in Turkey. Javadpour et al., (2013) conducted their study in Iran. Findings
revealed psychoeducation is an effective intervention for increasing medication
adherence in patients with BD.

Limitations

The main limitation of this review was the small number of studies on
psychoeducation as an intervention to improve medication adherence. There were only
five studies that examined the direct effect of psychoeducation on medication adherence.
Even so, only two of the five studies met inclusion criteria measuring specifically
medication adherence as the primary outcome variable. (Eker & Harkin, 2012; Colom et al., 2005). The other three studies meeting inclusion criteria measured medication adherence as one of a number of other outcome variables. Javadpour et al. (2003) studied the outcome of psychoeducation on quality of life, hospital readmission, and medication adherence. Dogan & Sabanciogullari (2003) studied the effect of psychoeducation intervention on medication adherence, severity of symptoms, and quality of life. Aside from studying the effect of psychoeducation on medication adherence, Colom et al. (2003) studied the effect of psychoeducation on the number of relapses and hospitalizations.

The studies varied on the measurement of the effectiveness of the psychoeducation intervention on medication adherence. The time intervals ranged between six weeks and twenty-four months. Three of the studies that examined the outcome were longitudinal. Eker & Harkin (2012) measured outcome after six weeks of psychoeducational sessions. The study by Dogan & Sabanciogullari (2003) measured the outcome after three months. Javadpour et al. (2013) measured the outcome after eighteen months. Colom et al. (2003, 2005) measured medication adherence at six, twelve, eighteen, and twenty-four months.

**Level of Evidence**

Johanna Briggs Level of Evidence table (2014) was used to determine the quality of the five studies used in this review. The goal in using this evidence table (Appendix A) is to have high quality studies that will determine if psychoeducation can be used as an evidence-based intervention. Studies are graded on a scale of 1 through 5. Studies that
have a high rating have strong evidence that the intervention is effective. Studies with low ratings are considered studies that provide weak evidence.

Each grade of 1 through 5 has subcategories of a, b, c, or d. Level 1 articles are considered highest quality of evidence. Level 1 represent studies that use experimental design to determine the findings of an intervention. 1a. studies are systematic review of randomized control trials (RCTs); 1b. studies use a combination of RCTs and other study designs; 1c studies are pure RCTs; 1d. are pseudo RCTs. Level 2 studies use quasi experimental designs. 2a. studies are systematic reviews are quasi experimental; 2b. studies are systematic review of quasi-experimental and other lower quality designs; 2c. are quasi experimental prospectively controlled design; 2d. pre-test-posttest or historic/retrospective control group study. Level 3 studies use observation-analytic designs. 3a. are systematic review of comparable cohort studies; 3b. are systematic review of comparable cohort and lower study designs; 3c. are cohort studies with control group; 3d. are case control studies; 3d. are observational studies without a control group. Level 4 studies are observational-descriptive. 4a. are systematic review of descriptive studies; 4b. are cross-sectional studies, 4c. are case series; 4d. are case studies. Level 5 studies are expert opinion and bench research studies. 5a. are systematic reviews of expert opinion; 5b. are expert consensus; and 5c. are bench research/single expert opinion.

Four of the studies received a level 1c rating since they were randomized control trials (Colom et al., 2003; Javadpour et al., 2013; Dogan & Sabanciogullari, 2003; Eker & Harkins, 2012). The study by Colom et al. in 2005 received a 1d rating since it was a
subanalysis of a larger RCT (Colom et al., 2003). Using the 120 participants in the study by Colom et al. (2003), researchers determined patients that were on lithium therapy in the subanalysis (Colom et al., 2005). There were 44 patients in the control group and 49 patients in the intervention group that were on lithium therapy who were included in this subanalysis (Colom et al., 2005).
Table 1. Level of Evidence Table: Scale I-V (Joanna Briggs institute, 2014)

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Research Design</th>
<th>Level of Evidence</th>
<th>Clinician Administering the Intervention</th>
<th>Length of Intervention</th>
<th>Sample/Characteristics</th>
<th>Instrument</th>
<th>Results</th>
<th>Critique: Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2013</td>
<td>RCT</td>
<td>1C.</td>
<td>The intervention was administered by a psychiatry resident. The resident who provided the intervention was also the patients one to one therapist.</td>
<td>Eight, fifty-minute sessions of psychological intervention administered weekly.</td>
<td>N=108 patients who were divided into two groups randomly assigned to intervention or control group.</td>
<td>Medication adherence rating scale (MARS), Hamilton Depression Score, and BechRafaelsen Score administered every 6 months for a total of 18 months.</td>
<td>There was a statistically significant enhancement in medication adherence in the intervention group compared to control group.</td>
<td>Strengths: There was close follow up during and after the study through monthly telephone follow up care and support for eighteen months after face-to-face psychoeducational intervention. The study used reliable and valid research tools to measure quality of life and recurrence to hospitalization in control vs. intervention group.</td>
<td>Limitations: Only 86 participants</td>
</tr>
<tr>
<td>No.</td>
<td>Year</td>
<td>Research Design</td>
<td>Level of Evidence</td>
<td>Clinician administering the intervention</td>
<td>Length of Intervention</td>
<td>Sample/Characteristics</td>
<td>Instrument</td>
<td>Results</td>
<td>Critique: Strengths Limitations</td>
<td></td>
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<tr>
<td>2</td>
<td>2012</td>
<td>Semi-experimental design (pre-ex-post test, RCT)</td>
<td>I/C</td>
<td>Doctorate educated psychiatric mental health nurse who was first author of study and a therapist, who was the second author.</td>
<td>Psychosocial education administered to intervention group for two hours per week for six weeks.</td>
<td>N=35 randomly assigned to intervention group and N=36 were randomly assigned to control group</td>
<td>Attitudes towards antiepileptic treatment (AET) and medication adherence rating scale (MARS)</td>
<td>Six weeks after intervention, psychosocial education improved medication adherence.</td>
<td>Strengths: The intervention was provided only by nurses. Reliable and valid subjective measurement tools were used. Limitations: No objective measurement tool used in serum levels of mood stabilizers. Short length of intervention and small sample size.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Research Design</th>
<th>Level of Evidence</th>
<th>Clinician administering the intervention</th>
<th>Length of Intervention</th>
<th>Sample/Characteristics</th>
<th>Variables/Instruments</th>
<th>Results</th>
<th>Critique: Strengths/Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2005</td>
<td>Subanalysis of data from larger study (Colom et al., 2003). Post hoc analysis.</td>
<td>1D.</td>
<td>Two of the same experienced psychologists used throughout the study</td>
<td>Twenty one structured sessions that are thirty minutes in length followed by group exercise and discussion</td>
<td>The original study (Colom et al., 2003) consisted of N= 120. N = 44 of control group and N = 49 patients in intervention group who were taking lithium during study (Colom et al., 2003) were included in this subanalysis.</td>
<td>Serum lithium levels collected at 6,12,18, 24 months.</td>
<td>Significant higher serum lithium levels in patients in intervention group. Levels remained stable at 6, 12, 24 month follow ups in intervention group. Levels in control group showed greater variability.</td>
<td>Strengths: Sample size N=93 obtained from larger study N=120 who were selected using valid research tool to meet inclusion criteria. All patients received lithium and psychiatrist who ordered medication was blinded to participants in intervention group. Limitations: Serum lithium was only drawn every six months. Differences of lithium levels between groups was small.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Research Design</th>
<th>Level of Evidence</th>
<th>Clinician administering the intervention</th>
<th>Length of Intervention</th>
<th>Sample/Characteristics</th>
<th>Variables/Instruments</th>
<th>Results</th>
<th>Critique: Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2003</td>
<td>Paralled two group (experimental and control) randomized single blind trial.</td>
<td>1C.</td>
<td>Two of the same experienced psychologists used throughout the study</td>
<td>Twenty-one structured sessions that are thirty minutes in length followed by group exercise and discussion.</td>
<td>N=120 patients who have been in remission for at least 6 months prior to study who were receiving standard pharmacological treatment. N=60 patients in the intervention group and N=60 in the control group.</td>
<td>Structured clinical interview, young mania rating scale, HoMe and Reale intervention inventory, psychiatric medication and reasons for change scale. Medication compliance was measured by compliance-focused interview with first degree relative and measurement of serum levels of mood stabilizers. Scales were administered every 2 months.</td>
<td>Statistically significant reduction in the number of relapse, number and length of hospitalization. There was no difference in baseline serum valproate or carbamazepine levels between the two groups.</td>
<td>Objective and subjective measure of adherence was used to measure medication adherence. Prospective follow up for at least two years.</td>
<td>Limitation: It is unclear how many times during the study serum levels of mood stabilizers were drawn. It is unknown if the intervention can be implemented by less experienced psychologists. It is unknown what specific aspect of psychoeducational increases medication adherence.</td>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>2003</td>
<td>RCT</td>
<td>1C.</td>
<td>Psychiatric Nurses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Three sessions one week apart for forty-five minutes. Three months later, control and intervention group filled out instruments to assess effectiveness of the psychoeducation intervention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=26 patients, N=14 intervention group and N=12 in control group</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Objective measurement of serum lithium levels. Subjective measurement tools included personal and disease characteristics information form, medication information questionnaire, brief symptom inventory, quality of life assessment. Objective and subjective measurements taken before and three months after intervention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Serum lithium levels were normal in 57.1% of participants prior to study. Three months after intervention, 100% of participants had normal serum lithium levels. Increase in scores of intervention group vs. control group in knowledge of disease, symptoms level, and increase quality of life.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Strengths: study used various tools that were all reliable and valid to monitor effect of intervention on medication adherence. The intervention was implemented by psychiatric nurses, and the result is directed towards nurses making psychoeducation a basic nursing responsibility.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limitations: Small sample size and short period of intervention length. Since measurement tools were administered only three months after intervention, it is unknown if the intervention works for long term medication adherence.</td>
</tr>
</tbody>
</table>
Chapter 6  
Conclusions

Recommendation

The aim of this systematic review was to answer the following research question, “Does psychoeducation intervention have an effect on medication adherence in patients with bipolar disorder?” The studies reviewed provide statistically significant evidence that psychoeducation intervention increases medication adherence in patients with bipolar disorder.

Recommendation Grade

Using Joanna Briggs Institute Grading of Recommendations (2014), the intervention was graded for its feasibility, appropriateness, meaningfulness, and effectiveness. Feasibility, appropriateness, meaningfulness, and effectiveness (FAME) of the psychoeducation intervention were classified using a Grade A and Grade B tool (Appendix B).

Explanation of Recommendation using FAME

Feasibility

According to the Joanna Briggs Institute (2014), an intervention is considered feasible if it is “cost effective, the resources to implement the intervention are available, and if there is sufficient level of competency available to effectively implement the intervention (p. 8).” The feasibility of the psychoeducation intervention received a grade A (Table 2). In three of the studies, a therapist, medical resident, or psychologist
implemented the intervention (Javadpour et al., 2012; Colom et al., 2003; Colom et al., 2005). In Eker & Harkins study in 2013, the first researcher was a doctorally prepared nurse, and the second researcher was a therapist. Both researchers implemented the intervention in their study. The study of Dogan & Sabanciogullari in 2003 used nurses to implement the intervention. It is feasible and more cost effective to use nurses to implement the intervention compared to a psychologist or medical residents. All five of the studies found psychoeducation intervention effective in increasing medication adherence regardless of who implemented the intervention. The results of all the studies showed positive outcome in the intervention groups. The psychoeducation intervention may be more cost effective in the long run since it appears to decrease chances of a patients decline necessitating rehospitalization (Javadpour et al., 2012).

**Appropriateness**

The Joanna Briggs Institute (2014) puts forward that an intervention is appropriate if it is “culturally appropriate, if it is transferable and applicable to the majority of the population, and if it is easily accessible to a variety of circumstances” (p. 8). The appropriateness of the psychoeducation intervention received a grade B (Table 2). The five studies that met inclusion criteria took place outside of the United States. The study conducted by Dogan & Sabanciogullari (2003) and Eker & Harkin (2012) were conducted in Turkey. Javadpour et al. conducted their study in 2012 in Iran. The studies conducted by Colom et al. (2003) and Colom et al. (2005) both took place in Spain.

**Meaningfulness**
An intervention is considered feasible if it is “associated with positive experiences” (Joanna Briggs, 2014, p. 9). The meaningfulness of the psychoeducation intervention received a grade A (Table 2). Three of the five studies (Colom et al., 2003; Dogan & Sabanciogullari, 2003; Javadpour et al., 2012) found an improvement in the quality of life in individuals who received psychoeducation intervention. The studies conducted by Javadpour et al. (2012) and Colom et al. (2003) found a decrease in the length and frequency of psychiatric hospitalization after receiving the psychoeducation intervention.

**Effectiveness**

Joanna Briggs Institute (2014) postulates an intervention to be effective if “there is a beneficial effect and if it is safe” (p. 9). Psychoeducation intervention received a grade of A for its effectiveness on medication adherence in patients with bipolar disorder (Table 2). The studies reviewed showed that the intervention was effective in increasing medication adherence. The content of the psychoeducation intervention involves educating patients about their illness, signs and symptoms, triggers, treatment, and stress management. The intervention was found to improve an individual’s quality of life, decrease hospitalization, and decrease chance of relapse into a more acute and decompensated state. The studies reviewed found that patients who receive psychoeducation are more likely to be medication compliant. Additional findings from the studies report that due to medication compliance and tools gained from the psychoeducational session, patients are less likely to be re-hospitalized, relapse into mania or depression and have an improved quality of life.


**Table 2. Grading of Recommendations Table: Findings for effectiveness of psychoeducation intervention on medication adherence in patients with bipolar disorder (Joanna Briggs Institute, 2014).**

<table>
<thead>
<tr>
<th>Feasibility</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong evidence that merits application</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>A weak support, evidence supports the application but not high quality</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appropriateness</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong evidence that merits application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak support, evidence supports the application but not high quality</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Meaningfulness</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong evidence that merits application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak support, evidence supports the application but not high quality</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong evidence that merits application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak support, evidence supports the application but not high quality</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

**Limitations of Systematic Review**

There are only five studies measuring the effectiveness of the psychoeducation intervention. The five studies that exist are not conducted in the United States. The studies have small sample sizes. The study conducted by Colom et al., (2003) has the largest sample size N=120. The studies do not measure the effectiveness of the intervention longitudinally beyond two years (Colom et al., 2003; Colom et al., 2005).

**Implications for clinical nursing practice, patient education, and future research**

Research studies supporting the outcome of the use of psychoeducation intervention medication adherence in patients with bipolar disorder. The five studies that
met inclusion criteria for this review all took place outside of the United States. Since studies have found psychoeducation to be an effective and fundamental intervention at increasing medication adherence, nurses play an essential role in emphasizing the importance of conducting more studies in the United States. The results of this systematic review provide nurses and other health care providers with evidence of the effectiveness of psychoeducation as an intervention in increasing medication adherence. The psychoeducation intervention embodies the quintessential meaning of King’s conceptual model of nursing since it illustrates the role of the healthcare providers and patients in working together to increase medication adherence.

Nichols et al., (2011) put forth that high quality care will be provided by nurses if the care is centered on advocacy and education, comprehensive training, proper evaluation and intervention, and evidenced based practice. A growing problem in mental health care is the lack of emotional support and empathy given to patients with bipolar disorder. Stigma associated with mental illness may prevent patients from receiving the care needed to promote long-term recovery. Along with emotional support nurses can implement the intervention in daily nursing practice through educating patients about their condition, teaching about prodromal symptoms and triggers, and emphasizing the importance of medication adherence.

The multiple roles nurses play effectively sets a precedent for other disciplines to follow. Nurses are patient advocates, health educators, and researchers that can contribute to providing evidence on the effectiveness of psychoeducation intervention while
promoting wellness and recovery in patients living with BD. Crowe et al. (2010) advocates that psychoeducation is the most easily implemented by mental health nurses.

Psychoeducation as an intervention to increase medication adherence can significantly improve the outcome and prognosis of individuals with BD and holds the potential of being considered an evidence based intervention as a gold standard in treatment for patients living with BD.
### Appendix A. Level Scale: I-V Key for Joanna Briggs Institute Levels of Evidence (2014)

<table>
<thead>
<tr>
<th>Levels of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 – Experimental Designs</td>
</tr>
<tr>
<td>Level 1.a – Systematic review of Randomized Controlled Trials (RCTs)</td>
</tr>
<tr>
<td>Level 1.b – Systematic review of RCTs and other study designs</td>
</tr>
<tr>
<td>Level 1.c – RCT</td>
</tr>
<tr>
<td>Level 1.d – Pseudo-RCTs</td>
</tr>
<tr>
<td>Level 2.a – Systematic review of quasi-experimental studies</td>
</tr>
<tr>
<td>Level 2.b – Systematic review of quasi-experimental and other lower study designs</td>
</tr>
<tr>
<td>Level 2.c – Quasi-experimental prospectively controlled study</td>
</tr>
<tr>
<td>Level 2.d – Pre-test – post-test or historic/retrospective control group study</td>
</tr>
<tr>
<td>Level 3.a – Systematic review of comparable cohort studies</td>
</tr>
<tr>
<td>Level 3.b – Systematic review of comparable cohort and other lower study designs</td>
</tr>
<tr>
<td>Level 3.c – Cohort study with control group</td>
</tr>
<tr>
<td>Level 3.d – Case – controlled study</td>
</tr>
<tr>
<td>Level 3.e – Observational study without a control group</td>
</tr>
<tr>
<td>Level 4.a – Systematic review of descriptive studies</td>
</tr>
<tr>
<td>Level 4.b – Cross-sectional study</td>
</tr>
<tr>
<td>Level 4.c – Case series</td>
</tr>
<tr>
<td>Level 4.d – Case study</td>
</tr>
<tr>
<td>Level 5.a – Systematic review of expert opinion</td>
</tr>
<tr>
<td>Level 5.b – Expert consensus</td>
</tr>
<tr>
<td>Level 5.c – Bench research/ single expert opinion</td>
</tr>
</tbody>
</table>

From the Joanna Briggs Institute (Joanna Briggs Institute, 2014)
Appendix B. Grading of Recommendations Tool (Joanna Briggs Institute, 2014).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A ‘strong’ recommendation for a certain health management strategy where: it is clear that desirable effects outweigh undesirable effects of the strategy; where there is evidence of adequate quality supporting its use; there is a benefit or no impact on resource use, and values, preferences and the patient experience have been taken into account.</td>
</tr>
<tr>
<td>B</td>
<td>A ‘weak’ recommendation for a certain health management strategy where: desirable effects appear to outweigh undesirable effects of the strategy, although this is not as clear; where there is evidence supporting its use, although this may not be of high quality; there is a benefit, no impact or minimal impact on resource use, and values, preferences and the patient experience may or may not have been taken into account.</td>
</tr>
</tbody>
</table>
References


