



12-1-2013

Medication Adherence: To Have is to Hold

James A. Benn

Follow this and additional works at: <https://commons.und.edu/theses>

Recommended Citation

Benn, James A., "Medication Adherence: To Have is to Hold" (2013). *Theses and Dissertations*. 3174.
<https://commons.und.edu/theses/3174>

This Independent Study is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact und.common@library.und.edu.

MEDICATION ADHERENCE: TO HAVE IS TO HOLD

by

James A. Benn Jr.

Bachelor of Science Nursing, University of South Carolina, 2005

A Non-thesis Independent Project

Submitted to the Graduate Faculty

of the

University of North Dakota

In partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

December 2013

Running head: MEDICATION ADHERENCE

Medication Adherence: To Have is to Hold

James Benn

University of North Dakota

Abstract

Nature of the problem: Medication non-adherence is consistently the most frequent cause of mental health decompensation, relapse of mental illness, and hospitalization. The solution to non-adherence remains quite elusive, despite it being relatively easy to identify as the most major obstacle to successful control of mental illness.

Method: Eighteen documents published between years 2002-2012 were rated using the AACN's evidence leveling system. The 18 studies were examined to better understand what is known and not known about the challenge we face in trying to effect recovery and to prevent relapse of mental illness in the United States.

Results: Various study designs, diverse interventions and treatment strategies demonstrated limited success in effecting sustained adherence. However, to date, the literature does not show there to be a single, simple, intervention that is effective. The evidence strongly suggests an interdisciplinary approach, using various combinations of interventions is the best strategy, but not a guarantee. A Power Point presentation was used to share the findings of this project with 13 PMHNP students and 2 active, expert PhD, PMHNPs.

Nursing implications: Adherence is a complex, multi-determinant, individualized process that is embedded in the core belief of the person. Nursing can use this knowledge to collaboratively work with patients, their families, and other health care team members to devise approaches to facilitate recovery and understanding of the role of medication adherence in recovery maintenance.

Keywords: adherence, non-adherence, serious mental illness, compliance

Medication Adherence: To Have is to Hold

Serious mental illness (SMI) has been defined as, “a mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) resulting in serious functional impairment which substantially interferes with or limits one or more major life activities” (National Institute of Mental Health [NIMH], 2012). The prevalence of SMI in the United States is approximately 4.5 percent (NIMH, 2012). In 2002, the total annual cost burden of serious mental illness in the US was 317 billion dollars (excluding individuals impacted by homelessness, co-morbidities, prison incarceration, and early mortality): 100 billion for health care expenditures; 193 billion in estimated loss of earnings; and 24 billion in disability benefits (Insel, 2008). Clearly, SMI is a very large and very persistent national problem. In 1992, the total economic burden was 156 billion. The figures for 2012 portend to be consistent with the growth trajectory of the previous decade (Insel, 2008).

As families, health care facilities, health care providers, state, local, and national policy makers, and legislators grapple with where and what to cut in order to bring fiscal budgets in line with current economic realities, the challenge to adequately care for those with SMI becomes ever more difficult. For decades, there has been much thought, talk, and research with regard to how to reduce costs in mental health care. There is essentially unanimous agreement across the spectrum of mental health care that relapse prevention is arguably the most important and most effective cost cutting measure available. Research clearly shows that the problems of relapse and failure to achieve recovery are multi-determinant (Lehner et al., 2007; Valenstein et al., 2011; Velligan et al., 2010b). There are major disconnections in the complex system wherein mental health care service and health promotion intersect with the client’s personal commitment and perceived sense of responsibility to actively work to maintain his/her mental health. Despite the

tremendous advancement and availability of evidence based psychosocial therapies and an abundance of improved psychiatric pharmaceutical agents, medication non-adherence remains a monolithic impediment to recovery (Lehner et al., 2007; Velligan, 2009; Weiden, 2007).

Research has consistently borne out the fact that medication and treatment non-adherence among patients with SMI can and do lead to very grave consequences on many levels (Lehner et al., 2007; Velligan et al., 2010b). Medication non-adherence among individuals with SMI remains high for inpatients and outpatients, which in turn, directly and indirectly influence economic costs (Lehner et al., 2007).

Purpose

Even with the advent of second-generation antipsychotic medication (SGA), and their improved side-effect profile, research shows most patients to have drifted away from compliance within one year. 20% to 30 % of clients with schizophrenia never even begin treatment upon being discharged from the hospital; 14% to 32% drift away from treatment within 3 months, and between 66% to 72% have completely discontinued compliance within 2 years (Cook et al., 2008). The fact that most people with SMI do actually benefit from antipsychotic medications has been thoroughly vetted over the decades (Corrigan, 2002; Lang et al., 2010 Lehner, et al., 2007; Weiden, 2007) would seem to present the most convincing argument for adherence. However, this is not the case; at least, it is not the case for long enough periods for many of those who actually suffer with SMI and their families.

Given that we know treatment non-adherence is the single most common reason for relapse or recurrence, it seems appropriate that there be a persistent call and cry for more-concentrated efforts at formulating specific strategies focused on effective ways to promote medication/ treatment adherence in individuals with SMI. This treatise proposes to investigate

the causes of medication/ treatment non-adherence in patients with serious mental illness (SMI). This will be accomplished via a thorough review of the current literature to highlight knowledge gaps related to the question of why non-adherence is so persistently prevalent in this population. It is hoped that uncovering answers to the question will lead to credible hypotheses that might be tested in future studies in order to yield effective strategies, therapies, and interventions to specifically improve medication and treatment adherence, as well as, to generally break the cycle of hospitalization, non-adherence, relapse, and hospitalization.

Significance

Research shows that treatment non-adherence is strongly associated with an increased risk for hospitalization (Corrigan, 2002; Lang et al., 2010). The vast majority of psychiatric-mental health inpatients require re-hospitalization within two years of their previous inpatient admission, due to relapse, secondary to failure take prescribed medications (Vuckovich, 2010). The author further states that one-third to one-half of those relapse cases will be involuntarily committed with increased disability and serious symptoms such as active psychosis and threatening behaviors toward themselves and others (Vuckovich, 2010).

For the purposes of operationalization for research and use to measure patient adherence has been quantitatively defined as, taking at least 80 percent of prescribed medication doses (Pratt, et al., 2006; Valenstein et al., 2011; Velligan et al., 2010a). There is consistent reminder throughout the literature that the issue of non-adherence is complex and multi-determinant. Some of the common factors impact adherence are: attitudes and past behaviors; co-morbidity and symptom severity; demographic factors; medication-related factors; cognitive impairment, family and social support; relationship factors; factors related to the service delivery system; and

the patient's perception of stigma; (Corrigan, 2002; Donohoe, 2006; Velligan et al., 2010a; Velligan, 2010b; Vuckovich, 2010).

Serious mental illness occurs in all populations and cultures across the lifespan (Vacarolis & Halter, 2010). Unlike periodic somatic illness or disease, which might impair or disable a specific bodily function or set of related functions, SMI has the potential to cast a very broad web of chronic impairment and dysfunction over all dimensional aspects of the individual person. Vacarolis and Halter state that SMI tends to be "recurrent or chronic" (2010, p. 678). We can logically conclude that the lives of individuals with SMI and the lives of their significant others, are frequently and chronically stressed. Clearly, this is a problem which reaches across every socio-economical and every cultural divide. This is a dilemma which affects each of us in ways which may not be fully realized yet. This is a national problem which will require each of us to resolve.

Theoretical Framework

The Psychiatric Mental Health Nursing Scope & Standards of Practice (American Nurses Association, 2007), specifically in standards 5E through 5G, commits and dedicates the psychiatric mental health nurse practitioner (PMHNP) to channel his/her knowledge, will, resources, and goodwill in effort to facilitate achieving the most optimal state of wellbeing possible for the individual client/patient. This writer's personal conviction regarding the election of nursing is capsulized as follows: Nursing is all about positively altering the dynamic of human suffering. Relief of human misery is a worthy aspiration on any level, in any form, or in any context. The nursing profession's core mission is bound to and invested in recognizing and respecting the dignity and inherent worth of each individual. I understand its principal aim to be: to intelligently and compassionately serve, advocate, demonstrate, educate, collaborate,

investigate, and urge to legislate in effort to ensure that each individual can gain maximum access to the maximum opportunity to realize his fullest potential in every dimension of wellness. Striving and working to heal, to prevent, and to minimize the ravages of mental and emotional pathology is the avenue through which psychiatric and mental health Nurse Practitioners exert their talents and gifts in effort to contribute to the forward progress of the journey of life. These standards and a personal belief regarding the core mission of nursing are salient factors which make the *Theory of Self-Efficacy* a timeless, and therefore, most-relevant framework from which to approach the idea of understanding and transforming the massive epidemic that is non-adherence to antipsychotic medication.

Dr. Albert Bandura said, “The value of a psychological theory is judged by three criteria. It must have explanatory power, predictive power, and, in the final analysis, it must demonstrate operative power to improve the human condition” (Bandura, 2004, p. 628).

The theory of self-efficacy declares that people can change. In 1977, Bandura published a paper titled, “Self-Efficacy.” Over the past 30 years, the concept of self-efficacy has had a profound and widespread positive effect on the lives of people and institutions. Bandura’s operating core belief is that human beings can change; however, he knew and demonstrated that in many instances we need help and direction in order to transform mere emotional or cognitive whims about change into new, positive, active adaption (Bandura, 2004).

Dr. Bandura defines self-efficacy as: an individual’s belief about his capability to make decisions to take actions that exercise influence or control over one’s life. Clearly, we are not all equally bathed and nurtured in experiences which allow us to be fully endowed with ample self-efficacy. Some of us have more, others have less; however, what Bandura seeks to imprint upon us is, each of us can develop or improve our capacity of self-efficacy.

He reasons four main mechanisms to facilitate the development of a strong sense of efficacy. The most effective route is through *mastery experiences*. There is no argument that successful experiences at anything breeds and builds confidence in one's efficacy. Clinicians and care providers should continuously seek out effective means to expose and to educate the non-adherent patient with regard to the basic utilitarian benefits of recovery.

Bandura (2004) states a second way of developing and strengthening beliefs of personal efficacy is through *social modeling*. The idea being, we learn from each other in all sorts of ways and in every kind of circumstance. Frequent, positive, effective exposure to others who have successfully adapted adherence to their normal life activity can be a powerful social modeling experience for patients with SMI. It is not enough to simply be in the presence of the models, the individual struggling with adherence needs to be able to meaningfully engage and interact with said models. Clinicians and providers should continuously seek out realistic and effective strategies to accomplish this.

The third way of bolstering an individual's belief that he has what it takes to succeed is through *social persuasion* (2004). When one is encouraged and has confidence in the source of encouragement and confidence in the essence of the message behind the encouragement, he is willing to try harder or try longer. This is the reason which underpins the recommendation by Velligan et al. (2010b) that clinicians and care providers focus on appropriately improving and expanding the therapeutic alliance with the patient struggling with adherence. Bandura says, much more is involved in the social persuasion process than simply expressing faith in the individual's capabilities (2004). The social persuader is empathetic and acts in the best interest of the struggling individual. The social persuader seeks to facilitate opportunities for individuals to be successful. Clinicians and care providers can maximize on this intervention through building

sound rapport which can facilitate the development of strong, effective, therapeutic collaboration between the mental health care team and patients.

The fourth way Bandura believes self-efficacy is strengthened is by listening to their *physical and emotional states*. Mood and affect are dynamic domains which play a very large role how individuals navigate the day-to-day challenges of life. Bandura states, efficacy beliefs exert a very powerful influence on cognitive, emotional, motivational, decision-making processes (2004). We constantly measure how experiences make us feel, think, and react. Many times, individuals desperately need medication assistance in order to regulate, and to temper mood and affect. The major challenge to the PMHNP and other care providers is maintain effective and thorough assessment of the patient's belief and attitude about medication and its role in the overall recovery process.

The *Theory of Self-Efficacy* is well suited to many interventions designed to promote and maintain mental health recovery. The theory continues to demonstrate its relevance and applicability in helping individuals to break new ground, to reach new heights in personal and professional endeavors. It is this writer's perspective that the concept of self-efficacy flows in conformity with the axiomatic reality that some life changes can only be realized if and when the individual living the experience decides to allow it.

Definitions

Medication compliance is a politically incorrect term when one means adherence. Compliance is the accurate term to be used for patients in involuntary settings and coercive influence is the main determinant of why they are taking medications (Vukovich, 2009).

Serious mental illness (SMI) is defined as “mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) resulting in serious functional impairment which substantially interferes with or limits one or more major life activities” (NIMH, 2012).

Medication adherence is the degree to which patients take medication as prescribed by healthcare providers (Donohoe, 2006; Velligan et al, 2009).

Review of Literature

The AACN grading tool (Armola et al., 2009) criteria was used to grade levels of evidence presented in the articles and studies used in this project. These levels of evidence include:

Level A -Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment;

Level B -Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment;

Level C -Qualitative studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results;

Level D -Peer-reviewed professional organizational standards, with clinical studies to support recommendations Theory-based evidence from expert opinion or multiple case reports;

Level E -Theory-based evidence from expert opinion or multiple case reports;

Level M- Manufacturers’ recommendations only (Armola et al., 2009, p. 72).

In addition, The Agree II Instrument (Agree II Next Consortium, 2009) was used to render an evaluation or rating of the quality and reliability of any practice guideline presented in the project.

Types of Treatment Interventions

There are many reasons for non-adherence to psychotropic oral medication such as, inability to afford the cost, a belief that medication is not needed, poorly understood instructions, medication side effects, quality of patient/provider relationship, and various others (Haynes, 2012; Donohoe, 2006; Velligan et al., 2009; Velligan, 2010). Whatever the reasons for non-adherence, a realistic, achievable solution must be developed to help interrupt the well-worn cycle. The very alarming, aforementioned statistics demand that an answer be found, discovered, or created. The hope and expectation of this review process is that insight gained will lead to new ideas and efforts which help bridge the expanse between the known and the unknown with regard to interrupting non-adherence and facilitating adherence.

The 18 studies selected for review, investigated a variety of interventions aimed at promoting and enhancing adherence to psychotropic medication in populations with SMI. Each study was laid out on a grid-like evaluation matrix and arranged to allow a visual contrasting of authors, design, methods, sample size, data analysis findings, and other elements of the studies. Treatment intervention groups of the various studies were compared to the “usual care or usual treatment” control groups. The diverse types of interventions being tested included pharmacy-based interventions (Valenstein et al., 2011; Sajatovic et al., 2007; Lang et al., 2010), interventions which investigated age differences and its effect on adherence (Pratt, et al., 2006; Lang et al., 2010), outpatient, intensive case management interventions (Van Dorn et al., 2010; Rotondi et al., 2010; Dixon et al., 2009; Pratt et al., 2006), telemedicine and electronic monitoring interventions (Cook et al., 2008; Rotondi et al., 2010), cognitive behavioral therapy as a direct intervention (Donohoe, 2006), motivational interviewing (MI) as measurable intervention (Corrigan, 2002), differences in provider/patient relationships, as an intervention

(Sajatovic et al., 2006), and an intervention in which specific registered nursing teaching is the measurable treatment (Cooke, et al., 2008). This writer will discuss the literature and findings from the context of the design method or type of study each work is. The designs are as follows: systematic/integrative reviews, RCT/non-RCT, guidelines, retrospective studies, correlational studies, cross-sectional study, and structured interviews.

Systematic/Integrative Reviews

There are four articles in this category. Two are meta-analyses (Haynes et al., 2012; Velligan et al., 2006), and two are integrative reviews of literature (Corrigan, 2002; Donohoe, 2006) with qualitative analysis. Each review contributed important substance and deepened the well of knowledge regarding the serious implications of non-adherence and proposed thoughtful ideas for future, testable interventions. Haynes et al. (2012) conducted a meta-analysis and review using a qualitative analysis of 78 unconfounded RCTs with the express purpose of discovering what is known and what is not adequately understood about self-administered medication adherence. Velligan et al. (2006) reviewed a total of 161 articles that specifically involved populations with SMI and interventions aimed promoting adherence or gaining better understanding of non-adherence issues. The mission of both was to not only get a clearer picture of the current state of adherence in general, but to also consider the gradations of adherence (partial, minimal, or full) in individuals.

The Haynes et al. (2012) review included RCTs which used interventions across the range of medical and psychiatric disorders, and across demographic characteristics. The only condition excluded was addiction disorders. The Haynes et al. (2012) review was not exhaustive; nevertheless it was very thorough. The review divided the RCT interventions in *long term* (greater than six months) and *short term* (less than six months) interventions. The various

features and instruments of each study was compared and the results carefully looked at for similarities and differences in outcomes. Ultimately, both reviews concluded that simple interventions were not effective, and a few longterm and/or complex interventions were effective. The review affirmed what many studies have: non-adherence is multi-determinant and complex (Haynes et al., 2012; Velligan et al., 2006). The findings speak to non-adherence presenting the very same dynamic challenge regardless whether the disorder being is medical or psychiatric. Both studies rate level A per the AACN evidence rating scheme.

The study by Corrigan (2002) is very interesting, in that it attempted to investigate the issue of adherence/non-adherence through the prism of health behavior theories (HB) and the use of motivational interviewing (MI). The central idea behind HB theories has to do with cognitive and interpersonal factors which have much to do with the decisions and actions human beings engage in to protect and maintain health. While MI was designed for and successfully used to effect positive outcomes in treating substance abusers, and it recently had been applied to other psychiatric disorders (Corrigan, 2002). He posited the premise, MI could be used to help clarify or enhance value expectancy (the perception of the cost and benefit of a disorder).

Corrigan highlighted the importance of committed, informed, and well-coordinated social support (total interactions in SMI client has with health care providers and family support), and thereby increase the likelihood of adherence in the client (Corrigan, 2002). The literature shows that there are various levels of barriers to adherence: client barriers (lack of disease awareness, cognitive deficits, sense of disempowerment, medication side effects) and social support barriers (poor partnership alliance between mental health system and client; a family/significant other system that is not actively engaged in promoting the value of adherence; a lack of resources or support for client; family/ significant others lack information or understanding of importance of

continued adherence for the long-term). Dr. Corrigan proposes that the greater portion of these barriers can be reduced or dismantled through MI and other empirically validated intervention strategies (Corrigan, 2002).

In 2006, Donohoe also delved into a study which attempted to look at the “world’s other drug problem” (non-adherence) from a cognitive behavioral perspective. He was particularly interested in RCT investigative studies done by Kemp in the late 1990s on “compliance therapy.” The initial study and the subsequent 18 month follow up study showed that knowledge and insight had significantly improved, but also drug attitudes, and adherence had improved—that is, time between readmission and relapse had increased in the treatment intervention group. Both studies show promise of helping to diminish the adherence gap and being more cost effective than the usual treatment. However, both studies also have similar limitations: relatively small study samples, and the cognitive and social dysfunction patients with SMI often face (Corrigan, 2002; Donohoe, 2006).

Donohoe (O’Donnell et al.) and his own investigation team attempted to successfully duplicate the Kemp study. The initial part of the RCT went exactly as it had for Kemp; however, the follow up study failed. In addition to other smaller differences, the O’Donnell et al. trial’s assessment of compliance was conducted blind to treatment, whereas the compliance assessors in the Kemp et al. study were not blinded (Donohoe, 2006). Both studies conclude, while there is promise that cognitive behavioral therapies can be helpful, there is no evidence that these interventions alone could exert a positive effect on adherence. The work by Dr. Corrigan was very interesting and offered multiple suggestions for further hypotheses and research. While it was not study which tested interventions, it proposed several evidence-based strategies for using

Motivational Interviewing to enhance value expectancy and social support in the client with SMI, health care professionals, and the client's family/significant others.

As shown by diverse types of other studies (Lehner et al., 2007; Velligan et al., 2009; Weiden, 2007) designed to understand the complexities of adherence. They too recommend a multimodal approach to adherence treatment (Corrigan, 2002; Donohoe, 2006).

RCT/Non-RCT Studies

There are six studies in this design category. Cook et al., 2008; Pratt et al., 2006; and Valenstein et al., 2011 used pharmacy-based interventions in which the treatment group received direct supervision, assistance, and education in connection to medication usage. Each investigation was well designed and controlled for multiple variables. The Cook et al. (2008) trial was a non-randomized study and used RNs to administer the treatment to the intervention group over the telephone. Registered pharmacists administered the treatment to the intervention group in the Valenstein et al. (2011) study; however, training and qualification of those administering treatment in the Pratt et al. (2006) trial is unclear. Each study was aimed at discovering whether its respective intervention would reduce emergency department (ED) use, increase medication adherence, increase knowledge, improve cognitive measures and clinical functioning, and decrease symptoms and relapse in people with SMI versus compared to SMI patients receiving the usual care. A variety of measures were used to assess medication adherence such as, self and informant reports, an attitude toward medication rating scale, pill counts, pharmacy fill/refill data, and medication possession ratios.

The treatment group in each study was well below 100 participants and therefore reflect a limiting of sample power. The three pharmacy-based trials collectively covered a wide range of ages (18 & older) as well as a sizable swath of demographic diversity. The sample pools

included patients from medicaid health plans (Cook et al., 2008), Veteran Affairs (Valenstein, et al., 2011), and community mental health centers (Pratt, et al., 2006). The time period for the application of the treatment interventions ranged from six to twelve months in addition to six to twelve months of follow up data collection. Various tools were use to analyze the data gathered from the respective studies. Cook et al. (2008) used SPSS 15.0 and ED visit data and MPRs; Pratt et al. (2006) employed the use of more than 10 different tools and assessment scales collect and decipher its data; and Valenstein et al. (2011) used MPRs, “composite adherence measure” (CAM), PANSS, intraclass correlation efficiencies (ICC), logistic regression, multivariate, and multiple linear regrssion analyses to quantify and interpret data. The sample size of the study by Valenstein et al., (2011) was less than ideal for extrapolating the results to the general population of persons with BPD. The relatively narrow age range of the cases in the registry limits the study by Sajatovic et al., (2007) in the same manner.

Both studies employed appropriate tools to exact a rigorous analysis of data yielded. Both studies produced results similar to previous research. Important implications for the mental-health, clinical practice setting can be drawn from each study. The study by Cook et al. (2008) was non-randomized. While it yielded useful evidence, it had multiple structural problems, which limited its generalizability and subjected it to bias from several angles. The results were similar for all three studies: MPR and knowledge of medication (and illness, where applicable) improved; however clinical symptoms and functionality was unchanged, neither was there any significant change in relapse tendencies.

The remaing three studies each used an intensified case management-type intervention as the investigative treatment. The interventions involved thorough pre and post treatment assessment of the the intervention and control groups. The treatment interventions engaged the

patients in very structured educational sessions on illness, relapse prevention, medication adherence, and overall treatment collaboration as a part of the recovery process. RNs and social workers, and other trained clinical staff were effectively used in the conduction of the studies. Dixon, et al., 2009; Rotondi, et al., 2010; and Vreeland et al., 2006 are RCTs with treatments designed to examine whether the intervention would improve knowledge of illness and medication, decrease ED use, increase clinical and cognitive functioning, or improve adherence. The treatment time for each study was one year, with a follow up data collection ranging from six months to one year. Sample participants were recruited from VA centers, with an age range 18-70 (Dixon et al., 2009), a state-wide mental health care delivery system, with an age range from 18-70 (Vreeland et al., 2006), and from community mental health centers and inpatient facilities, with a patient age range from 14-70 and a support person age range from 18-70. The same study also directly included significant others who were support persons to the patients as randomized sample participants (Rotondi et al., 2010). The size of the treatment groups of each study was much less than 100 and is determined to be a limitation of the study.

Each study concluded that intensive, case management-type intervention showed promise as each of the various interventions resulted in significant efficacy compared to the usual treatment with respect to the primary outcomes of knowledge of illness, medications, and increased awareness of rising crises. However, neither had significant effect on secondary outcomes such as clinical and cognitive functioning, symptoms, or medication adherence overall (Dixon, et al., 2009; Rotondi, et al., 2010; and Vreeland et al., 2006). The studies were well designed with controls and randomized treatment of the samples. They were powered to render a verdict as to the effect of the treatments on the primary and secondary outcomes. Each

investigative study in this design category merited a level B evidence grade according to the AACN grading standard.

Treatment Guidelines

Two pertinent works (APA, 2004; Velligan et al. 2009) were selected for inclusion in this design category, and therefore added to the article evaluation matrix as part of this project's literature review because they each self describe as guidelines. They are both completely invested in recommendations for either the usual care, or for new interventions to treat patients with SMI. The American Psychiatric Association's (APA) 2004 revised practice guideline called, *Practice Guideline for the Treatment of Patients with Schizophrenia*. This officially published treatment guideline is accessible on the APA's website and is available to assist clinicians and care providers in the diagnosing, treatment, and management of care for clients with schizophrenia. Treatment guidelines can be found on the the APA's website for the entire range of mental disorders. The composition of the document is informed by the exhaustive computerized search of vast bodies of every relevant literature database produced from 1994 through 2002 (APA, 2004). Essentially every level of evidence is represented in the guideline, as its mission was to put forth the most up to date evidence-based knowledge to govern every type and manner of therapy and treatment of the disorder. The guideline has much to say regarding medications, the efficacy of medications, and the importance of medication adherence to overall maintenance of well-being of the client with SMI. The APA guideline is thorough and of high quality evidence, however, the current version is eight years old and therefore, is not informed by current knowledge and evidence-based standards.

As mentioned earlier, the *Agree II Instrument* (Agree Next Steps Consortium, 2009), a widely accepted tool for methodically and systematically evaluating the quality and reliability of

evidence presented in practice guidelines, was used to render a quality score for this practice guideline. The grading was accomplished by this writer, as the single appraiser, and yielded the following scores: Domain 1- *Clarity and Purpose*, 100%; Domain 2- *Stakeholder Involvement*, 100%; Domain 3- *Rigour of Development*, 100%; Domain 4- *Clarity of Presentation*, 100% Domain 5- *Applicability*, 83%; Domain 6,- *Editorial Independence*, 92%; and Domain 7- *Overall Guideline Assessment*, 87%.

The second guideline in this category is, *The Expert Consensus Guideline Series: Adherence Problems in Patients with Serious and Persistent Mental Illness*. It was published in 2009. Its stated goal is to make recommendations for specifically assessing and improving adherence in patients with SMI. The project was conceived in face of the devastating consequences of poor adherence and non-adherence to treatment for patients (and their families) who suffer with SMI, and the great cost burden born by the United States, as documented earlier. An exhaustive search of pertinent literature between the years 1970 to 2006 was undertaken and from that review, a survey of 39 questions and 521 optional responses was developed. The survey was sent to 48 experts in The U.S., the United Kingdom, and the Netherlands. The experts were chosen based on the criteria of having published research on SMI and/or participation in previous expert consensus surveys that addressed issues related to the management of schizophrenia and bipolar disorder. 41 of the 48 leading experts responded to the survey. The response data was compiled analyzed using chi square and confidence intervals to establish concensus. Research data and other published findings concerning adherence were combined with the survey results to formulate clinically relevant and useful recommendations on how to effectively assess, and manage problems with adherence in SMI in order to promote the best outcomes for patients (Velligan et al., 2009). This guideline perspectives and

recommendations is very much consistent with the current professional and expert literature regarding adherence/non-adherence. Again, the Agree II Instrument was employed by this writer, as the single appraiser, to evaluate the reliability and validity of the guideline, and yielded the following scores: Domain 1- Clarity and Purpose, 100%; Domain 2- Stakeholder Involvement, 63%; Domain 3- Rigour of Development, 79%; Domain 4- Clarity of Presentation, 100% Domain 5- Applicability, 87%; Domain 6,- Editorial Independence, 92%; and Domain 7- Overall Guideline Assessment, 83%.

Retrospective Studies

Three retrospective studies (Gilmer et al., 2004; Lang et al., 2010, & Van Dorn, et al., 2010) were included in the article evaluation matrix. The three investigations, while pursuing very different primary questions, shared secondary and tertiary concerns. A more cohesive and thematically connected trail of evidence and thought process emerges as these studies are viewed collectively. Each used a large sample of data sets from paid medicaid medical and pharmacy claims for services to patients with established diagnoses of SMI (schizophrenia and bipolar spectrum disorders). Gilmer et al., (2004) 1,619 claims from California, Lang et al., (2010) 12,032 claims from the state of Florida, and Van Dorn et al., (2010) 3,576 claims from New York.

Almost immediately, one begins to appreciate the potential wealth of geographic and demographic factors that might draw interest with regard to the results of each study's findings. The primary objective of each study was: to analyze the relationship between adherence to antipsychotic medication and health care costs (Gilmer et al., 2004); to evaluate the rates of adherence among patients treated with long-acting injectable and oral antipsychotics (Lang et al., 2010); and to evaluate the time relationship between the end of involuntary (court ordered)

outpatient medication treatment and adherence (Van Dorn et al., 2010). Each of the studies mined data which was well established and stable. The Van Dorn et al. (2010) study used data collected between 1999 and 2007. They used multivariable time-series analysis to compare pre-court ordered treatment and post court ordered treatment. They also compared MPRs and pharmacy fill records to assess adherence. The results of the study showed a clear relationship of conformity between the length of court ordered medication treatment period and the amount of time, after the court ordered treatment ends, until pharmacy refills begin to decrease. In other words, the longer the court ordered medication treatment period, the longer it takes non-adherence to manifest itself (Van Dorn, et al., 2010).

Lang et al. used data collected by Florida medicaid between July 2003 and June 2006. They used MPRs to assess medication adherence; however, they also looked deeply into the specifics of individual degrees of adherence (or non-adherence) by analyzing medication persistence, medication consistency, and maximum gap in treatment. They employed reliability of Multivariate logistic regression models to identify predictors of hospitalization and non-adherence. Their findings are very consistent with the results of similar studies in this population with regard to medication nonadherence tendency: younger more than older, males more than females, minorities more than whites, substance users more than nonusers, and multiple axis I diagnoses more than a single axis I diagnosis. They also report patients who received long-acting first-generation antipsychotics (FGA) showed greater tendency toward non-adherence; whereas, patients who received long-acting second-generation antipsychotic (SGA) or a combination of both, showed less tendency toward non-adherence (Lang et al. 2010).

Gilmer et al. (2004) merged California state medicaid data and San Diego County Adult Mental health Services data from 1998 to 2000 to address the primary question of its

investigation. As mentioned in the introduction, the economic burden (and how non-adherence intensifies and greatly complicates an already very difficult crisis) of caring for SMI patients in the U.S. is very great and very complex (Insel, 2008). The authors of the study wanted to try to quantify what the cost of individual adherence or non-adherence might look like. They used pharmacy fill/refill records, and MPRs to assess medication adherence, as was done in the other studies in this category. They also used logistic regression model analysis to estimate the tendency of the various groups (adherent, partially adherent, non-adherent, and excess fillers) toward adherence. They conducted a post hoc analysis and logistic regression to address the finding on excess fillers, in particular.

The findings of this study were consistent with the findings of the two (Lang et al., 2010; Van Dorn et al., 2010) other retrospective investigations. Gilmer et al. (2004) found that 41% of the sample were adherent with their prescribed antipsychotic medication regimens; 24% were non-adherent; 16% were partially adherent; and 19% were excess fillers. Psychiatric hospitalization rates were 14% for those who were adherent; 35% for those who were non-adherent; 24% for the partially adherent; and 25% for those who have excess refills. Medical hospitalization for excess fillers was 12%, while the medical hospitalization rate for those who were non-adherent was 13%. The total pharmacy costs for excess fillers of medications were substantially higher than the total cost of any other group. In looking at excess fillers in more detail, the study found that minorities were less likely to be a excess fillers than whites; individuals in assisted living facilities were more likely than those living independently to be excess fillers; and receiving multiple antipsychotic medications was strongly related to the probability of being an excess filler of medication (Gilmer et al., 2004). The retrospective analysis by Lang et al. (2010) affirmed some of the results of various studies over the past

several years, which speak to the association between older age, SGA medication, combination therapy, and decreased likelihood of non-adherence. The study also associated younger age, substance abuse, and use of medications to treat comorbid mental illnesses with increased likelihood of repeat hospitalizations and non-adherence. The study limitations included it offered no interventions or control for the vast differences among demographic features.

The authors concluded, despite the widespread use of SGA, adherence to treatment remains a very significant problem. The study's findings with regard to adherence and the statistical predictors of non-adherence appears almost identical to the findings of similar studies (Gilmer et al., 2004). Each of the studies in the retrospective design rated level C per the AACN evidence leveling system.

Correlational Studies

Polit and Beck (2012) describe a correlational design as research which investigates relationships among variables of interest without introducing a research intervention. There is but a single article in the evaluation matrix from this design category. Sajatovic et al. (2007) conducted a correlational study to evaluate antipsychotic medication adherence among older versus younger individuals with bipolar disorder (BPD). The study sample was a large case registry (the VA's National Psychosis registry) of over 73,000. The authors wanted to see what effect age might exert on medication adherence among individuals with SMI. The medication possession ratio (MPR) was again, the basic quotient used to measure adherence. The age demarcation was 60 years. The group under 60 had a median age of 47 and the group over 60, the median age was 69.5. The study spanned a 12-month period. The MPR scoring was measured in degrees: fully adherent (> 0.8), partially adherent (> 0.5), or non-adherent (< 0.5). The results show, the over 60 group maintained a higher MPRs than the under 60 group. The study has

strengths and weaknesses of similar studies done previously. The Sajatovic, et al (2007) study was well-designed. It analyzed a large amount data which resulted in indications that there is clearly a relationship between age, combination therapy, and medication treatment adherence. According to the AACN leveling system, this study is rated level C evidence.

Cross-sectional Studies

The article evaluation matrix contains a single cross-sectional study. A cross-sectional design is a research study in which data is collected at a certain point in time and is observed and analyzed for relational clues and patterns (Polit & Beck, 2012). Cross-sectional studies are more broadly classified as descriptive studies, in that they are used to make observations and to describe relationships. Sajatovic et al. (2006) conducted a cross-sectional study using data collected over a four year period (1997-2000). The final sample consisted of 184 veterans from 11 different VA centers around the country. Each participant had been a part of an earlier study done by the Department of Veterans Affairs in order to collect data to help focus thinking (at the time) with regard to how to more effectively treat and manage bipolar disorder. Sajatovic et al. (2006) essentially inherited a ready-made sample. Each of the participants had an established diagnosis of bipolar disorder. The objective of the study was to analyze the sample group for patient characteristics, the dynamics of the individual patient-provider relationships, and barriers to care in the context of self-reported treatment adherence.

The analysis began by dividing the sample into two groups, *adherent* (N=113) and *non-adherent*(N=71), based on self-report and confirmed by patient characteristics data from the previous study. Sajatovic et al. (2006) had constructed several hypotheses prior to looking at any of the data:

We hypothesized that specific features would be related to better treatment adherence:

patient characteristics (fewer symptoms, overall better health status, higher functional level, female gender, and absence of substance use disorder), features of the patient provider relationship (better treatment alliance, fewer medications, and minimal medication adverse effects), and minimal or no barriers to treatment access (Sajatovic et al., 2006, p. 57).

A large battery of assessment tools were employed gather the data in the original study: Structured Clinical Interview for DSM-IV (SCID), Global Assessment Scale (GAS), Somatotherapy Index, Side Effects Summary, Patient Satisfaction Index, and several others. Chi square tests and pooled T tests were used to analyze and compare the differences between the to groups. The cross-sectional study team affirmed only one of their hypotheses: indeed substance use exerts an opposing force on adherence tendency in bipolar patients. However, the same could not be said for a prior history of substance use. The study authors found characteristics of the patient-provider relationship and the role of co-morbid conditions had a greater effect on adherence than the other factors mentioned in their hypothesis. These finding are not inconsistent with the findings of similar research (Sajatovic et al., 2008). The authors speculate that some of the limitations of the original study may be related to specific processes of healthcare delivery with the VA system (Sajatovic et al., 2006). Nevertheless, the larger import of the findings of the cross-sectional analysis is that adherence is not unidimensional, multi-determinant. The study also clearly illustrates the necessesity that clinicians and providers continually assess for avenues to strengthen the therapeutic alliance with patients and their support persons. The AACN evidence leveling system rates this cross-sectional study at level C.

Semi-structured Interviews

Roe et al. (2009) conducted an interesting qualitative study to explore why and how individuals with SMI engage the process of choosing to discontinue taking prescribed medications. The data for the qualitative analysis was collected via the format of a semi-structured interview. The participants of the study were recruited through newspaper advertisements and internet forums. The total sample consisted of seven adults with a schizophrenia or bipolar spectrum disorder. Each of the four women and three men had volitionally and fully stopped taking their medication for at least one year.

Each participant took part in a 90 minute, in depth semi-structured interview conducted by a tandem of a graduate psychology and an undergraduate psychology student who had been trained to conduct narrative interviewing. Each of the interview sessions were recorded and transcribed. The participants were asked to share their personal stories regarding how and when they were diagnosed with mental illness. They were asked to share their medication history and how and what their beliefs are regarding medication as a therapy or treatment and how they personally responded to the treatment (Roe et al., 2009). The interview process was structured to elicit the most complete subject expression of the participants' view and perception of medication therapy of their illness and on there lives.

Analysis of the data laid the ground work for the development of a "hypothesized" model of the process involved in deciding to no longer take medication. The authors presented the hypothesis as a five-stage process: Stage 1—*The Person Experiences a Major Emotional Crisis*; Stage 2—*The Subjective Experience of Taking Medication and Its Consequences*; Stage 3—*The Conflict: To Adhere or Not to Adhere?*; Stage 4—*Gradual Resolving of Conflict*; and Stage 5—*Developing a Personal Perspective on the Use of Medication* (Roe et al. 2009). This study is very small and therefore very limited in its power to be generalized to the larger population.

However, the results and findings of this qualitative analysis is very similar to the finding of related studies. Non-adherence is not one dimensional; it is not either black or white; instead, it is complex with multiple determinants (Velligan, 2010; Sajatovic et al., 2008). The results of the study strengthens the need for further investigation to understand the layers of subjective perception (core belief) which form the basis of adherence. Attitudes and beliefs can and do change therefore, the clinician and patient (the therapeutic alliance) can be the beneficiary of a nonjudgmental interview to assess and discuss the patient's beliefs about health, including adherence to medication can be incorporated in the overall discussion of other health promoting behaviors, life goals and plans to work on being as healthy as possible (Wieden, 2007). This article is rated level C evidence per the AACN grading system.

Methods

Literature published between 2002 and 2012 was searched using well-known major words (and their variations) as a starting point to search for related articles and studies concerning treatment adherence in mental illness. These well-known words included *medication non-adherence*, *medication noncompliance*, *serious mental illness (SMI)*, *mental illness*, *mental disorders*. Using the PubMed database's MeSH search, with the limits of adult, English language, and published in the last 10 years yielded 150,587 items for *mental disorders* (search #1), 2105 items for *medication adherence* (#2). A general PubMed search (with the same limits) yielded the following: 3401 items for *serious mental illness* (#3); 4725 items for *medication non-adherence* (#4); 4777 items for *medication noncompliance* (#5); combined search #1 and #3 to yield 3205 items (#6); combined #4 and #5 to yield 4652 items (#7); finally a search combination of #3 and #4 yielded 23 items.

The same limits and process was used to search the CINAHL and PsychINFO

databases. After various combinations of limits and key-word searches, the yield narrowed to 21 and 24 research articles. *The Cochrane Library* was searched using the same terms and various combinations of the terms. Limits were set to Cochrane Reviews and publication between years 2002-2012. Search for terms *serious mental illness and treatment adherence* (#4) yielded 238 records; 215 records for *medication and treatment adherence and serious mental illness* (#3); a search using the key words, *treatment non-adherence and serious mental illness* produced 30 records (#2); and finally a search of the terms, *medication and treatment non-adherence and serious mental illness* yielded 30 records (#1). Each search returned only one record that was specifically applicable to the topic of this paper and that item was the first record atop three of the lists of results and listed third on the remaining. The record was selected for inclusion in this review.

A manual search of the reference list of an article with an extensive review of works on treatment non-adherence in the seriously mentally ill was also conducted. The combined computer database and manual searches resulted in 38 relevant articles or research studies, and one pertinent treatment guideline for review. Eighteen of those studies were evaluated in a spreadsheet format, in effort to systematically scrutinize each for the quality of its value and to ascertain if it lends any legitimacy or significance to the purpose of this inquiry.

Over the past four semesters, this writer has had many opportunities to speak with and listen to Kimberly M. Gregg, MS, PMHCNS-BC, clinical assistant professor at the College of Nursing at the University of North Dakota, where she also serves as the co-director of the Psychiatric and Mental Health Nursing track. She will soon complete her DNS dissertation. She has plied her expertise for more than two decades as a psychiatric mental health clinical nurse specialist. As a current, expert care provider, and as academic adviser to this writer, she has been

a readily- accessible consultant throughout the course of this project. In addition, the findings of this project were shared via a Power Point presentation with Dr. Kay L. Foland, PhD, RN, PMHNP-BC, CNS-BC and Dr. Virginia S Biddle, PhD, RN, PMHNP, PNP.

Results

Appendix A lists 18 studies selected for review of evidence related to adherence behaviors. It compares the type study, the criteria for defining adherence, the method for assessing adherence /non-adherence, the sample size, the demographics of the sample, and the types of treatment intervention used in the study (if applicable). 22% of the studies were reviews of literature which sought to improve the understanding of adherence and the development of more effective treatments. One review was a meta-analysis of every kind of adherence intervention across all medical and psychiatric disorders (except addiction disorders), another focused SMI and various adherence treatments, the other reviews sought to review literature which looked at the effect of cognitive behavior and health belief theories as treatment interventions. Despite the divergent angles from which the reviews approached the question, the finding and conclusions were essentially the same.

33% of the studies included among the review articles are RCT/NRCT investigations. Each one investigated the effects of an intervention (*Script Assist, Meds Help, BCTI, SOAR, MMAA, Team Solutions*) designed to improve the patient's knowledge of his/her diagnosis and prescribed medications to see how the change in knowledge might affect the quality and/or duration of medication adherence. One of the studies included significant others or support persons in the treatment process. The sample sizes were generally less than 100 participants, included males and females, diverse ethnicities across the 18-70 age range. 100% of the investigations used multiple measures to assess adherence such as, MPR, self-reports, pill counts,

and others. On average, each study was 12-16 months long, with an additional 6-12 months follow up period. The findings were the same despite the variety of interventions: non-adherence is multi-determinant, and interventions can be effective, however, they cannot be simple or one dimensional.

34% of the studies listed in *appendix A* are retrospective, correlational, cross-sectional, or structured interview designs. Study investigators analyzed state Medicaid or VA center data. Sample sizes ranged from 150 to more than 10,000 SMI patients, looking at adherence behaviors and practices based on, provider reports, self-reports, pharmacy fill/refill data, MPR, and other assessment measures. The findings show consistent results. Multivariable analysis, multi-linear regression models, random coefficient regression, and other instruments were appropriately used to analyze the various studies to account for the differences in demographic characteristics such as age and gender, and to attempt to identify predictors of non-adherence. Despite the varying investigative approaches, the diverse treatment strategies, the broad range of demographic characteristics, the selection of assessment methods, and the various selections of instruments of analysis, the broad findings of the studies were as follows: males with SMI tend to be less adherent than females; younger patients less than older; minorities than whites; persons of low socioeconomic status less than those of a higher socioeconomic status; and persons with multiple axis I diagnoses tend to be less adherent than those with a single axis I diagnosis. These findings are very consistent with the findings of similar investigations.

The remaining 11% of the documents evaluated was an official, practice guideline and specific, expert recommendations aimed at breaking the cycle of non-adherence. The evidence shows that adherence is complex and multi-determinant. It also clearly affirms certain combinations of interventions can be effective in improving adherence. 100% of the studies in

appendix A call for more investigation of complex, longer term treatments. The studies also call for design and testing of treatment strategies which focus on enhanced collaborative alliances among care providers, patients and supporters, and other interdisciplinary team members.

The question, objective, and findings of this project were shared with 2 active, expert PhD, PMHNPs and 13, second-year PMHNP students via a Power Point presentation. Their input and commentary was instructive and lead to helpful adjustments in several sections of the paper. Each respondent personally affirmed the significance of the problem and the need for further investigation and study to find effective treatment to promote medication adherence. Each respondent also expressed interest in opportunity to access the full reading of the project.

Discussion and Implications for Nursing

Each study, article, or guideline evaluated lends some degree of validity and affirmation of the necessity to more mind power and financial power focused on the gigantic national problem we face in medication adherence/non-adherence. One author very aptly characterized the problem of adherence as, “the world’s other drug problem” (Donohoe, 2006). The works cited each speak to the very real chaos and dysfunction, which SMI deals out to families on a daily basis, all across the United States. Each study or body of work reviewed is a valid and useful piece of the evidence puzzle that must be used to construct more realistic, effective interventions to remedy the predictors of non-adherence. The usual treatment and care approach to non-adherence to antipsychotic medication has allowed lives to drain of vitality and many families to wane in hope.

Each of the documents in this review in large or small measure contributes to the slowly, steadily evolving body of investigative knowledge, which moves us ever closer to the answer and remedy to medication and treatment non-adherence in adults with SMI. There is no doubt,

there is a role for Motivational Interviewing to play in helping health care professionals, family members, and individual clients to build effective alliances which function to facilitate the objectives of the treatment plan of care in every way. It is clearly conceivable that tele-health medication interventions will become a significant part of the solution to effect practice change in the ongoing fight to decrease the likelihood of non-adherence behaviors. The results from the study by Valenstein et al. (2011) offers valid affirmation that an appropriate process and mechanism can be designed to assist clients with better understanding what their medication is for and why it should be used precisely as directed. A cost effective program that embodies the intent of this intervention would represent a significant practice change, while moving the bar in the right direction with regard to dismantling non-adherence. The gaps in knowledge are gradually being bridged by new theory and evidence-based strategies for solving problems.

Perhaps, the greatest challenge that blocks the path of liberation from non-adherence is the epic struggle that plays itself out daily in the minds of Americans, as to what is the value and worth of health care. The country is yet a great distance away from the mind-set that declares that every individual's health is as valuable as any other's is, and that there is a collective-debt that we owe to each other to actively safeguard it as a cherished right. The passage of the Affordable Care Act (ACA) moves us a little closer; but there are still many months before it is fully implemented. Yes, the allocation of resources, priorities, time, and value is always a great and difficult struggle in the most enlightened and wealthiest civilization the world has known so far.

Implications for Practice

There is a very clear, very consistent thread of interest for the role of the PMHNP born out in each study, including those which do not appear in the reference list. Mental illness is not

going to go away. The literature is unanimous in its assessment that medication and treatment adherence is not bigger or more pronounced in mental illness than it is in medical illness—it is equally epidemic there as well (Donohoe, 2006; Haynes et al., 2012). However, there is no medical counterpart that rivals the level of social upheaval and chronic disability that non-adherence delivers to the young and able-bodied with SMI. The evidence urges clinicians and care providers to purposefully engage patients and their support persons on the issue of adherence (Donohoe, 2006; Haynes et al., 2012; Velligan, et al., 2010b; Weiden, 2007).

It is this writer's perspective that there is a pressing need to educate patients and their families, but also a need for many care providers and clinicians to assess and evaluate their individual understanding and perspective regarding the complexity of adherence. It is much more than simply not taking or refusing to take a prescribed medication. Weiden (2007) states, viewing adherence and non-adherence as part of navigating the illness-recovery continuum, can help reduce and defuse the frequent power struggles between clinician/care providers and the patient.

Implications for Research

Research consistently shows non-adherence is multi-determinant and complex (Velligan, 2010; Velligan et al., 2010b); therefore, it would be useful to call for more studies that investigate complex treatment interventions. The evidence also points to a need to for testing of interventions that involve support persons playing a more informed role in assisting loved ones suffering from SMI. As more PMHNPs become care providers in inpatient and outpatient settings, perhaps the growth and expansion of a more holistic perspective will inspire new and innovative treatment ideas and interventions.

Implications for Education

There is no doubt that more care providers will be needed to help care for the millions of newly insured patients who are sure to seek out care, once the ACA is fully implemented in 2014 and the coming years. It is expected there will be a need for thousands more care providers. There is great concern that there will not be enough primary care physicians to meet the need. There is much talk of PMHNPs being readied to help fill the gap, especially in rural or remote communities. The plans to make the DNS the entry level for NPs is problematic and has caused many to wonder if there might be an NP shortage as well. This writer thinks the masters level NP is the best mechanism for trying to meet the coming demand in the short term, while at the same time, not completely exhausting the dwindling numbers of nurse educators needed to train and educate nurses of all degree levels.

Implications for Health Policy

It is clear, U.S. health policy with regard to mental health parity needs to progress to the point where there is no lack of parity between medical illness and mental illness. This writer is fully convinced that the longstanding practice of ascribing less value, less importance—and therefore, less care—to mental illness and addiction disorders has helped make mental illness stigma far worse and more entrenched than it might have been in an enlighten, educated society. A recent report states, approximately 70 million Americans experienced some form of mental illness in 2010. It further states, for about 17 million Americans the illness was severe enough to interfere with daily life activities such as school, work, and family (Conley, 2012). Each of those 70 million Americans is intimately connected to at least one or two other Americans. Clearly, this issue affects all Americans. The report goes on to say mental illness and addictive illnesses are widespread in American Society across all socioeconomic lines.

Very often, persons with SMI may have comorbid medical conditions such as high blood pressure, diabetes, cardiac disease, cancers, or other medical disease. Yet, only a small percentage of those with a mental illness actually seek out care, due to the walls of stigma put up by governments and insurance companies (Friedman, 2012). It makes no rational sense to argue for insuring wellness for the body, while at the same time, deny insuring wellness for the mind. Health care policies should advocate establishing full parity of illnesses in the U.S. It would be more than naïve to think that full parity would immediately stamp out stigma or erase the deep emotional scars caused by it; however, it is more than reasonable to desire the eradication of a disease that has only harmed mankind.

Summary/Conclusions

Adherence and non-adherence behaviors fluctuate and should be considered part of the illness and therefore clinicians should seek to make managing it a learning experience for the patient (Weiden, 2007). He states, clinicians need to thoroughly assess each patient's behavior and attitude with regard to medication adherence in order gain meaningful insight of where the patient stands. He goes on to say, clinicians should fully incorporate medication adherence into the psycho-educational process. The most critical assessment is to seek to know the patient's core belief about medication, for as Weiden (2007) so emphatically puts it, "Perception is reality where patient beliefs about medication are concerned" (p. 17).

Provision 8, of the Code of Ethics for Nurses states "The nurse collaborates with other health professionals and the public in promoting community, national, and international efforts to meet health needs" (ANA, 2012). This statement speaks to the commitment of the nursing profession to strive to bring humane, compassionate care and advocacy to people across the expanse of the earth. This is also the personal conviction of this writer. People can change; but

sometimes, they need a hand of assistance, words of direction, or a listening ear to better see the way they should go. Medication non-adherence is a persistent blight, not just in the clinical world of inpatient and outpatient mental health care, but even more so at the home front. Home is where people who live with, love, and care for individuals with SMI, struggle with the consequences of non-adherence every day. To have adherence to sound practices that promote wellness and wholeness on one's side is to hold the power of recovery in one's grasp. As clinicians and care providers, we must up our game, reinvigorate our resolve, reinvent our strategies, and remind ourselves that the only way to help patients with SMI and their families to lay claim to practical, realistic, achievable expectations for adherence, is through strong alliances and effective collaboration across the disciplines. Throughout history, it has always taken the entire village to make home strong, safe, and secure for everyone.

References

- Agree Next Steps Consortium. (2009). *The Agree II Instrument*. Retrieved September 10, 2012, from Agree Trust: <http://www.agreetrust.org>
- American Nurses Association. (2007). *Psychiatric-mental health nursing: Scope & standards of practice*. Silver Springs, MD: Nursesbooks.org.
- ANA. (2012). *Code of ethics for nurses*. Retrieved from American Nurses Association: <http://nursingworld.org/MainMenuCategories/ThePracticeofProfessionalNursing/EthicsStandards/CodeofEthics.aspx>
- American Psychiatric Association. (2004). *Practice guideline for the treatment of patients with schizophrenia second edition*. doi:10.1176/appi.books.9780890423363.45859
- Armola, R. R., Bourgault, A. M., Halm, M. A., Board, R. M., Bucher, L., Harrington, L., . . . Medina, J. (2009). AACN levels of evidence: What's new? *Critical Care Nurse*, 29(4), 70-73. doi:10.4037/ccn2009969
- Bandura, A. (2004). Swimming against the mainstream: The early years from chilly tributary to transformative mainstream. *Behavior Research and Therapy*, 42(6), 613. doi:10.1016/j.brat.2004.02.0
- Conley, M. (2012). *1 in 5 Americans suffers from mental illness*. Retrieved from ABC News: <http://abcnews.go.com/blogs/health/2012/01/19/1-in-5-americans-suffer-from-mental-illness/>
- Cook, P., Emiliozzi, S., Waters, C., & El Hajj, D. (2008). Effects of telephone counseling on antipsychotic adherence and emergency department utilization. *The American Journal of Managed Care*, 14(12), 841-846.

Corrigan, P. W. (2002). Adherence to anti-psychotic medications and health behavior theories.

Journal of Mental Health, 11(3), 243-254. DOI:10.1080/09638230020023633

Dixon, L., Goldberg, R., Iannone, V., Lucksted, A., Brown, C., Kreyenbuhl, J., Fang, L., & Potts, W. (2009). Use of critical time intervention to promote continuity of care after psychiatric inpatient hospitalization. *Psychiatric Services, 60* (4), 451-458.

Donohoe, G. (2006). Adherence to antipsychotic treatment in schizophrenia: What role does cognitive behavioral therapy play in improving outcomes? *Disease Management & Health Outcomes, 14*(4), 207-214.

Friedman, R. (2012, July 9). *Good news for mental illness in health law*. Retrieved from The New York Times: http://www.nytimes.com/2012/07/10/health/policy/health-care-law-offers-wider-benefits-for-treating-mental-illness.html?_r=0

Gilmer, T. (2004). Adherence to treatment with antipsychotic medication and health care costs among Medicaid beneficiaries with schizophrenia. *The American Journal of Psychiatry, 161*(4), 692. doi: 10.1176/appi.ajp.161.4.692

Haynes, R. B., Ackloo, E., Sahota, N., McDonald, H. P., & Yao, X. (2008). Interventions for enhancing medication adherence. *Cochrane Database of Systematic Reviews, (2)*, CD000011-CD000011. doi: 10.1002/14651858.CD000011.pub3

Insel, T. R. (2008). Assessing the economic costs of serious mental illness. *The American Journal of Psychiatry, 165*(6), 663. DOI:10.1176/appi.ajp.2008.08030366

Lang, K., Meyers, J. L., Korn, J. R., Lee, S., Sikirica, M., Crivera, C., Dirani, R., Menzin, J. (2010). Medication adherence and hospitalization among patients with schizophrenia treated with antipsychotics. *Psychiatric Services, 61*(12), 1239. doi: 10.1176/appi.ps.61.12.1239

Lehner, R., Dopke, C., Cohen, K., Edstrom, K., Maslar, M., Slagg, N., & Yohanna, D. (2007).

Outpatient treatment adherence and serious mental illness: A review of interventions.

American Journal of Psychiatric Rehabilitation, 10, 245-274. DOI:

10.1080/15487760601166324

National Institute of Mental Health. (2012). *Statistics*. Retrieved February from

http://www.nimh.nih.gov/statistics/SMI_AASR.shtml

Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for*

nursing practice (9th ed.). Philadelphia, PA: Wolters Kluwer Health Lippincott Williams

& Wilkins

Pratt, S. I., Mueser, K. T., Driscoll, M., Wolfe, R., & Bartels, S. J. (2006). Medication non-

adherence in older people with serious mental illness: Prevalence and correlates.

Psychiatric Rehabilitation Journal, 29(4), 299-310.

Roe, D., Goldblatt, H., Baloush Klienman, V., Swarbrick, M., & Davidson, L. (2009). Why and

how people decide to stop taking prescribed psychiatric medication: Exploring the

subjective process of choice. *Psychiatric Rehabilitation Journal*, 33(1), 38-46. doi:

10.2975/33.1.2009.38.46

Rotondi, A.; Anderson, C.; Haas, G.; Eack, S.; Spring, M.; Ganguli, R.; Newhill, C.; &

Rosenstock, J. (2010). Web-based psychoeducational intervention for persons with

schizophrenia and their supporters: One-year outcomes. *Psychiatric Services*, 61 (11),

1099-1105.

Sajatovic, M. (2008). Factors associated with prospective long-term treatment adherence among

individuals with bipolar disorder. *Psychiatric Services*, 59(7), 753. doi:

10.1176/appi.ps.59.7.753

- Sajatovic, M. S., Bauer, M., Kilbourne, A. M., Vertrees, J. E., & Williford, W. (2006). Self-reported medication treatment adherence among veterans with bipolar disorder. *Psychiatric Services, 57* (1), 56-62.
- Sajatovic, M., Blow, F.; Kales, H.; Valenstein, M.; Ganoczy, D.; & Ignacio, R. (2007). Age comparison of treatment adherence with antipsychotic medications among individuals with bipolar disorder. *International Journal of Geriatric Psychiatry, 22*(10), 992-998. DOI:10.1002/gps.1777
- Valenstein, M., Kavanagh, J., Lee, T., Reilly, P., Dalack, G., Grabowski, J., . . . Blow, F. (2011). Using a pharmacy-based intervention to improve antipsychotic adherence among patients with serious mental illness. *Schizophrenia Bulletin, 37*(4), 727-736. DOI:10.1093/schbul/sbp121
- Van Dorn, R. A., Swanson, J. W., Swartz, M. S., Wilder, C. M., Moser, L. L., Gilbert, A. R., Cislo, A. M., & Robbins, P. C. (2010). Continuing medication and hospitalization outcomes after assisted outpatient treatment in New York. *Psychiatric Services, 61* (10), 982-987.
- Varcarolis, B., & Halter, P. (Eds.). (2010). *Foundations of psychiatric mental health nursing: A clinical approach* (6th ed.). St. Louis, MO: Saunders Elsevier.
- Velligan, D. (2010). *Improving adherence in patients with major mental illness*. Retrieved from Medscape education psychiatry & mental health: <http://www.medscape.org/viewarticle/732805>
- Velligan, D. I., Yui-Wing, F. W., Glahn, D. C., Barrett, J. A., Maples, N. J., Ereshefsky, L., Miller, A. L. (2006). Defining and assessing adherence to oral antipsychotics: A review of the literature. *Schizophrenia Bulletin, 32*(4), 724. doi: 10.1093/schbul/sbj075

Velligan, D., Weiden, P., Sajatovic, M., Scott, J., Carpenter, D., Ross, R., & Docherty, J. (2009).

The expert consensus guideline series: Adherence problems in patients with serious and persistent mental illness. *The Journal of Clinical Psychiatry, 70 Suppl 4*, 1-48.

Velligan, D., Weiden, P., Sajatovic, M., Scott, J., Carpenter, D., Ross, R., & Docherty, J.

(2010a). Assessment of adherence problems in patients with serious and persistent mental illness: Recommendations from the expert consensus guidelines. *Journal of Psychiatric Practice, 16*(1), 34-45. DOI:10.1097/01.pra.0000367776.96012.ca

Velligan, D., Weiden, P., Sajatovic, M., Scott, J., Carpenter, D., Ross, R., & Docherty, J.

(2010b). Strategies for addressing adherence problems in patients with serious and persistent mental illness: Recommendations from the expert consensus guidelines. *Journal of Psychiatric Practice, 16*(5), 306-324.

DOI:10.1097/01.pra.0000388626.98662.a0

Vuckovich, P. (2010). Compliance versus adherence in serious and persistent mental illness.

Nursing Ethics, 17(1), 77-85. DOI: 10.1177/0969733009352047

Weiden, P. (2007). Understanding and addressing adherence issues in schizophrenia: From theory to practice. *The Journal of Clinical Psychiatry, 68 Suppl 14*, 14-19.

Appendix A

First Author (year)	Conceptual Framework	*Design/ Method Evidence Level	*Sample/ Setting	Major Variables	Measurement	Data Analysis	*Findings	*Appraisal Worth to practice
Valenstein 2011 <i>Schizophren Bulletin</i> , 37(4),727	Intervention informed by Health Belief Model	RCT examining effect of pharm based intervention (meds help) In increasing psychotropic medication adherence Level B	n=118 from 4 VA facilities w/ SMI trx grp n= 60 and usual care grp n=58 604, 118 consented and enrolled Randomized by % of non-adherence	dv ¹ =↑ adherence dv ² =↓ PANSS, ↓ QWB, ↓CSQ-8 iv= Meds Help dv	Medication possession ratios (MPR) = primary outcome measure 2 nd outcome(decrease in pos and neg symptoms) PANSS, quality of wellbeing (QWB), and client satisfaction (CSQ-8) were each scored 6 & 12 months Measurements reliable	MPR (CAM) @baseline, 6 & 12 mos using logistic linear regression analysis. Multivariable analysis for diff levels of pre study adherence. Multiple linear regression to adjust for age, race, dx, and study site	¹ MPR increase of 25% Meds Help grp over UC grp	Study results consistent with similar recent studies. Study appears useful re: thinking about practice changes Intervention showed signif impact on outcome. 2 nd outcomes not borne out by study Limits: 1 not double blind, 2adherence results are approximate, not actual 3 sample is small, and study not fully randomized
Sajatovic et al. 2007 <i>IJGP</i> , 22(10), 992-98	none	Correlational study to compare tx adherence among patients w/ bipolar DO between grps < age 60 w/ grps > age 60 No interventions Level C	VA cases from National Psychosis Registry >60(~age 69.5), n=6,461 <60(~age 47.5) n=26,530	Study measured degree of adherence fully adherent (MPR >0.8), partially adherent(>0.5), non-adherent(<0.5) among the two age grps	MPR for pts using antipsychotic were monitored for 12 months	Descriptive stats, multiple logistic model, multinomial multiple logistic regression models, and Wilcoxon tests were used to compare various characteristics of pt's adherence and to control for various demographic effects	¹ >degrees of adherence in >60 grp ² more substance abuse and homelessness with <60 grp	1 result correlate w/similar studies. 2 Tx adherence appears better w/two antipsychotics compared to monotherapy Limits: 1 MPR are approx. & may not reflect actual med ingestion 2 VA sample don't extrapolate well to general bipolar pop. 3 Wider avg. age diff. might

								show more pronounced adherence degrees Study appears to be helpful in thinking about practice changes
Lang et al. 2010 <i>Psychiatric Services</i> , 61(12) 1239		Claims-based retrospective cohort analysis Level C	n=12,032 FL Medicaid recipient claims schizophrenic disorder + w/ antipsychotic rx= 1 inpt or 2 outpt dx + at least 1 rx	looked for connection btw med consistency, persistence, mpr, and therapy gaps + adherence	examined MPR, med persistence, consistency + max. continuous gap in therapy(refills/next injection) data from july 2004-june 2005 large grp into 5 smaller based on fga oral , sga oral, fga+sga oral, fga longacting, sga longacting	Multivariate logistic regression models identified predictors of nonadherence + hospitalization	mean±SD MPR was .79±.23 persistence was 94.1%±16.4% consistency was 83.3%±16.4%, gap in treatment was 29.7±41.4 days 32% had psych hospitalization Predictors of nonadherence: age, substance abuse, drugs used to tx mood, anx,	nonadherence lowest among older patient, without concomitant psychiatric diagnoses. and those receiving long-acting second-generation medications or oral first- and second-generation medications. Results consistent w/ similar studies
Corrigan, P. 2002. <i>J. of Mental Health</i> , 11(3), 243-54	informed by Health Belief Model	literature review with clinical studies to support. Recommendation to ↑ adherence level C		can MI be used to emphasize value expectancy and social support to ↑ adherence			connection between value expectancy/social support and adherence	conclusions can be useful to designing intervention for practice change convincing support for MI as tool to clarify + enhance value exp
Cook et al. 2008 <i>The American J. of Managed Care</i> , 814(12), 841-46	informed by transtheoretical model	Non-RCT to examine if a telehealth RN program (ScriptAssist) would affect ED visits or SGA medication adherence level B	n=210 Medicaid health plan members n=51 tx grp, n=159 control grp	iv=ScriptAssist dv ¹ ↓ED visits dv ² ↑ adherence	monitored ED visits and script refills. Tx grp received calls from RN, education, encouragement Pt self-report compared with Pharm reports x 6 mos all participants had baseline visits and adherence established.	SPSS-150, PMPY(ed visits)	tx grp showed ↓ED visits, ↑ adherence compared to control grp	significant positive effect of tx on ED visits, med adherence results consistent with similar studies limits-sample sz, not randomized, no account for varying demographics, study looked at SGA medications , excluded FGA
APA 2004 <i>Practice guideline for schizophrenia</i>	practice guideline for patients w/schizophrenia	used Agree II Instrument to grade quality=domain scores range from 100% to						useful for dx and treatment of SMI. Used to inform types

		67% Level D						of medication and efficacy of treatment
Haynes et al. 2008 <i>Cochrane database of Systematic reviews, Issue 4</i>	none	Systematic review-- Qualitative analysis 78 RCTs. Level A	N=78 unconfounded RCTs of interventions to increase Rx medication adherence across medical and psych illnesses, except addictions disorders.		Looked at longterm (12mos) & shortterm (6mos) treatments: Extracted rates and their variance for measuring methods in each study.	Qualitative analysis and review	Shortterm-some interventions helped; longterm-no simple interventions helped, few complex interventions helped	Evidence that efforts to increase adherence need to be ongoing.
Dixon 2009 <i>Psychiatric Services</i> 60 (4), 451-58	none	RCT Study looked at effect of 3-month brief critical time intervention (CTI) on continuity of care from inpt care to outpt Level B	N=135 for VA patients age 18-70 w/ dx of SMI	Intensive case mangt contact between inpt case manager, outpt case workers, other agencies & patient in the intervention grp, Usual treatment in control grp	Significant difference between intervention and control grps	Used t-test & chi square analysis to compare demographic and clinical characteristics	↑ outpat services, ↓ number day between inpt discharge and outpt follow up	Results consistent with similar studies. Evidence shows intervention helpful in promoting continuity of care, reducing ER visits. More study needed
Donohoe 2006 <i>Disease Mgt & Health Outcomes</i> 14 (4), 207-14	Cognitive behavioral theory	Integrative Review of 3 studies Level C	2 RCTs and 1 non-RCT investigating the effect of <i>compliance therapy</i> on treatment adherence		Looked at compliance therapy versus usual care		Results inconsistent	Show promise, current studies underway.
Rotondi 2010 <i>Psychiatric Services</i> 61 (11) 1099-1105	Telehealth intervention Schizophrenia online access To resources <i>SOAR</i>	RCT looked at effect of web-based psycho-education, support, & treatment info for patients and significant others (SO) versus usual care Level B	N=31 intervention grp, n=24 control grp patients 14 or older, SO 18 or older 18 month study	Intervention grp signed onto websites w/ special login/pw able to interact with much info about disease, tx, medications, s&s, etc. computer activity tracked	Measured knowledge, behavioral change in pat & SO	Mx' ed-effects intercept models,	Large & Significant difference betwn grps in Disease knowledge, s&s for pat and SO	Cost effective, can be done at home, more study needed. Results show promise for improving adherence
Gilmer 2004 <i>Am J Psychiatry</i> 161 (4), 692-99	Attempt to quantify adherence and predict nonadherence	Retrospective analysis Level C	n=1619 Medicaid claims of pt w/schizophrenia in San Diego	looked for med adherence	Pharmacy records use to measure possession ratios	Logistic Regression models	Results very similar other studies. Finding argue for new approaches, and further study	Shows nonadherenc is multi-determinant.
Roe 2009 <i>Psychiatric Rehab Journal</i> 33 (1)	none	Semi-structured interview Level C	n=7 adults with SMI four women, 3 men	NA	Qualitative analysis to assess personal meaning of taking and choosing to stop	Qualitative analysis, thematic content using cross case analysis	Narratives of the process of how and why one decides to stop taking meds. Very limited generalizability	Promotes understanding of patient's perspective of personal side effects of taking meds and the inner struggle.
Van Dorn 2010 <i>Psychiatric Service</i> 61 (10), 982-87		Retrospective analysis of effect of involuntary outpt tx on medication	N=3576 SMI patients on invol outpt tx and on NY medicaid rolls from 1999-2007	Invol tx 6 mos or less Invol tx more than 6 mos	Looked at MPR before and after periods of invol outpt tx	MPR, Multivariate analysis	MPR increased with both variables, Longer & higher MPR w/longer	These are some of the first results of this kind of study. Show

		possession rates (MPR) and hospitalization after commitment released Level C					periods of involun tx	promise of invol outpt tx having positive effect in reducing hospitalization & promoting tx adherence
Velligan (2009) <i>J Clinical Psychiatry</i> 70 Supp 4	NA	Expert consensus guidelines Level D	41/48 experts responded to survey 39 questions w/ 521 Options on factors of adherence. Surveys responses analyzed by international panel of 7 editors	NA	NA	Many studies testing various interventions reviewed	Nonadherence is multi-determinant and will require various interventions and must include various alliances. Guidelines developed from survey consensus	Very useful across clinical disciplines to think about new intervention and studies to test them.
Velligan 2006 <i>Schizophren Bulletin</i> , 32 (4), 724-42	Review of literature	Looked at studies to draw consensus on definition & assessment of adherence & Predictors of non-adherence with a pop Level A	n=161 various types of studies, over three decades adherence to medication in schizophrenia patients	NA	NA	Looged and compared 161 studies and their approach to assessing and defining adherence	Suggestions made to advance the understanding predictors of adherence and to developing Interventions to improve adherence to medication	Very useful across clinical disciplines to think about new intervention and studies to test them
Pratt (2006) <i>Psychiatric Rehab J</i> , 29 (4), 299-310	Intensive case mgt intervention approach	RCT looking at Medication (all meds) nonadherence in older people w/ SMI, across various adherence measurements, and other factors Level B	Study conducted over 12 mos n= 72 SMI patients over 50 yrs old receiving community mental health services at 3 centers in New England area of US 3 tx grps vs 1 Usual care grp 5/15/9 vs 43	The tx grps rec'd different levels of medication supervision	Pill counts, self-reports, informant reports, medication attitude scales Also measured Demographics, functional skill, environmental, cognitive, & clinical factors		Very few studies of this type done. Little variation between adherence measures, self-reports tend to overestimate adherence Multiple factors affect adherence. More supervision was related to better attitudes about adherence,	Useful conclusions, Objective measures should be used to evaluate adherence; patients benefit from skills training in adherence strategies
Sajatovic (2006) <i>Psychiatric Services</i> 57 (1) 56-62	NA	Cross-sectional analysis of pt-provider relationships, pt characteristics, and pt barriers related to self-report tx adherence Level C	Dept of Vet Affairs Adherent grp n=113 & nonadherent grp n=71 Vets w/ bipolar disorder	NA	Chi square tests & pooled T tests to compare differences between the two grps		Adherent grp were less likely to have substance issues; and had better financial support	Study is limited in several ways, but does highlight how substance use as major barrier to adherence
Vreeland (2006) <i>Psychiatric Services</i> 57(6) 822-28	NA	RCT "Team Solutions" intervention Psychoeducation 24 wks vs usual treatment Level B	n=71 SMI pts in partial programs 71/550 pt volunteered for study	Structured psychoeducat vs usual treatment	Measured quality of knowledge, Looked for improve in symptoms & functioning	Linear random coefficient regression model; tx complienc interview (TCI), Panss, CGI and many other metrics	Significant knowledge ↑, no change in sypm, or functioning,	Short time frame limitation, Literature show that psycho ed w/out behavioral and supportive service is ineffective in altering adherence

Appendix B

INDEPENDENT PROJECT

Medication Adherence: To Have Is To Hold
James Benn
University of North Dakota

THE PROBLEM IS EPIDEMIC IN SCOPE

20% to 30 % of clients with schizophrenia never even begin treatment upon being discharged from the hospital; 14% to 32% drift away from treatment within 3 months, and between 66% to 72% have completely discontinued compliance within 2 years (Cook et al., 2008).



Nonadherence Costs More Than We Can Bear

In 2002, the total annual cost burden of serious mental illness in the US was 317 billion dollars (excluding individuals impacted by homelessness, co-morbidities, prison incarceration, and early mortality): 100 billion for health care expenditures; 193 billion in estimated loss of earnings; and 24 billion in disability benefits (Insel, 2008)



PURPOSE

This treatise proposes to investigate the causes of medication/treatment non-adherence in patients with serious mental illness (SMI)



SIGNIFICANCE

Research shows that treatment non-adherence is strongly associated with an increased risk for hospitalization (Corrigan, 2002; Lang et al., 2010).

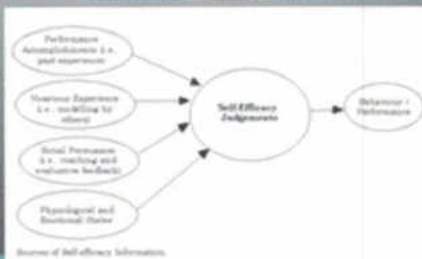
The vast majority of psychiatric-mental health inpatients require re-hospitalization within two years of their previous inpatient admission, due to relapse, secondary to failure take prescribed medications (Vuckovich, 2010).

Serious mental illness occurs in all populations and cultures across the lifespan.

Unlike periodic somatic illness or disease, which might impair or disable a specific bodily function or set of related functions, SMI has the potential to cast a very broad web of chronic impairment and dysfunction over all dimensional aspects of the individual person. Vacarolis and Halter state that SMI tends to be "recurrent or chronic" (2010, p. 678).

THEORETICAL FRAMEWORK

These standards and a personal belief regarding the core mission of nursing are salient factors which make the Theory of *Self-Efficacy* a timeless, and therefore, most-relevant framework from which to approach the idea of understanding and transforming the massive epidemic that is non-adherence to antipsychotic medication.



REVIEW OF LITERATURE

The 18 studies selected for review, investigated a variety of interventions aimed at promoting and enhancing adherence to psychotropic medication in populations with SMI.



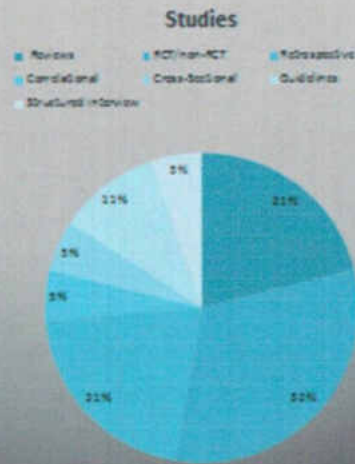
METHODS



Eighteen literary documents published between the years 2002-2012 were rated using the AACN's evidence leveling system. The 18 studies were examined to better understand what is known and not known about the challenge we face in trying to effect recovery and to prevent relapse of mental illness in the United States.

RESULTS

Appendix A lists 18 studies selected for review of evidence related to adherence behaviors. It compares the type study, the criteria for defining adherence, the method for assessing adherence /non-adherence, the sample size, the demographics of the sample, and the types of treatment intervention used in the study (if applicable).



RESULTS

Various types of studies, using different interventions, affirmed there are strategies and interventions which can be used in helping to promote medication adherence

However, to date, the literature does not show there to be a single, simple, intervention that is effective. The evidence strongly suggests an interdisciplinary approach across multiple dimensions, using various combinations of interventions is the best strategy, but not a guarantee.

The Research Says...



Despite the tremendous advancement and availability of evidence based psychosocial therapies and an abundance of improved psychiatric pharmaceutical agents, medication non-adherence remains a monolithic impediment to recovery (Lehner et al., 2007; Velligan, 2009; Weiden, 2007).

The Research Says...

medication and treatment non-adherence among patients with SMI can and do lead to very grave consequences on many levels (Lehner et al., 2007; Velligan et al., 2010b).



The Research Says...

Adherence is a complex, multi-determinant, individualized process that is embedded in the core belief of the person.

Reasons for non-compliance*

Forgot to take	79%
Ran out of medication	19
Too costly	9
Patient-perceived lack of need	9
Side effects	7
No improvement seen	3

*Totals more than 100% due to multiple mentions.
Credit: Wilson Health Information and The J. Scott Group, 2006.

The Solution Is Elusive!

The solution to non-adherence remains quite elusive, despite it being relatively easy to identify as the most major obstacle to successful control of mental illness.



CONCLUSIONS

Adherence and non-adherence behaviors fluctuate and should be considered part of the illness and therefore clinicians should seek to make managing it a learning experience for the patient (Weiden, 2007).

As clinicians and care providers, we must up our game, reinvigorate our resolve, reinvent our strategies, and remind ourselves that the only way to help patients with SMI and their families to lay claim to practical, realistic, achievable expectations for adherence, is through strong alliances and effective collaboration across the disciplines.

Medication Adherence: To Have Is To Hold



REFERENCES

- Cook, P., Emiliani, S., Waters, C., & El Hajj, D. (2008). Effects of telephone counseling on antipsychotic adherence and emergency department utilization. *The American Journal of Managed Care, 14*(12), 941-946.
- Corrigan, P. W. (2002). Adherence to anti-psychotic medications and health behavior theories. *Journal of Mental Health, 11*(5), 243-254. DOI:10.1080/096382302100021633
- Isa, T. R. (2005). Assessing the economic costs of serious mental illness. *The American Journal of Psychiatry, 162*(6), 663. DOI:10.1176/appi.app.2005.09050366
- Lang, K., Meyers, J. L., Korn, J. R., Lee, S., Skolnick, M., Citron, C., Dixon, R., Mrazek, J. (2010). Medication adherence and hospitalization among patients with schizophrenia treated with antipsychotics. *Psychiatric Services, 61*(12), 1239. doi:10.1176/appi.ps.61.12.1239
- Lehner, R., Dopke, C., Cohen, K., Eckert, K., Mialer, M., Stegg, N., & Yohanna, D. (2007). Outpatient treatment adherence and serious mental illness: A review of interventions. *American Journal of Psychiatric Rehabilitation, 10*, 243-274. DOI:10.1080/15487760601166324

REFERENCES

- Vancorolis, B., & Hallett, P. (Eds.). (2010). *Foundations of psychiatric mental health nursing: A clinical approach* (5th ed.). St. Louis, MO: Saunders Elsevier.
- Velligan, D., Weiden, P., Sajatovic, M., Scott, J., Carpenter, D., Ross, R., & Doderberg, J. (2009). The expert consensus guideline series: Adherence problems in patients with serious and persistent mental illness. *The Journal of Clinical Psychiatry, 70* Suppl 4, 1-48.
- Velligan, D., Weiden, P., Sajatovic, M., Scott, J., Carpenter, D., Ross, R., & Doderberg, J. (2010b). Strategies for addressing adherence problems in patients with serious and persistent mental illness: Recommendations from the expert consensus guidelines. *Journal of Psychiatric Practice, 16*(3), 306-324. DOI:10.1097/01.pra.0000388626.99662.a0
- Vuckovich, P. (2010). Compliance versus adherence in serious and persistent mental illness. *Nursing Ethics, 17*(1), 77-85. DOI:10.1177/0969733009352047
- Weiden, P. (2007). Understanding and addressing adherence issues in schizophrenia: From theory to practice. *The Journal of Clinical Psychiatry, 68* Suppl 14, 14-19.