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# Family Involvement, Clinician Beliefs and Child Psychiatric Rehospitalization

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LOMA LINDA UNIVERSITY  
School of Science and Technology  
in conjunction with the  
Faculty of Graduate Studies

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Family Involvement, Clinician Beliefs and Child Psychiatric Rehospitalization

by

Sherma J. Charlemagne

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A Dissertation submitted in partial satisfaction of  
the requirements for the degree of  
Doctor of Philosophy in Social Policy and Social Research

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September 2011

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Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

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## ABSTRACT OF THE DISSERTATION

Family Involvement, Clinician Beliefs and Child Psychiatric Rehospitalization

by

Sherma J. Charlemagne

Doctor of Philosophy, Graduate Program in Social Policy and Social Research  
Loma Linda University, September 2011  
Dr. Sigrid James, Chairperson

Psychiatric rehospitalization is estimated to fall between 30% and 50% among children and adolescents and is said to be the result of complex relationships between clinical and non-clinical child, family and service system factors. Psychiatric rehospitalization has been noted as an unfavorable outcome of inpatient treatment because of the associated economic to society and the family and emotional costs to the family and patient. Therefore, several attempts have been made in the relevant literature to identify and understand factors that will reduce the risk of rehospitalization in this population. In the context of parent professional collaboration, clinician beliefs and family involvement have been indicated as important aspects of treatment among children and youth.

To better understand how clinician beliefs and family involvement in treatment influence psychiatric rehospitalization, a prospective study was conducted across four phases on the child and adolescent inpatient units at a large psychiatric facility in Southern California. Data was collected from parents (N=167) of hospitalized children (ages 8-13) and adolescents (ages 14-17) and from a multidisciplinary psychiatric clinical team (N=27).

Study findings indicated that neither clinician beliefs nor parent participation in inpatient activities significantly predicted psychiatric rehospitalization. Parent perceptions of empowering behaviors on the part of clinicians, previous hospitalization and psychosocial risk significantly predicted psychiatric rehospitalization. Clinician beliefs did not moderate the relationship between empowering clinician behaviors and psychiatric rehospitalization. Additionally, nearly one-quarter of the children were rehospitalized within 90 days of discharge. Most of the children rehospitalized within the intervening period, were previously hospitalized, had 1 to 2 psychosocial risk factors, longer lengths of stay and were diagnosed with an internalizing disorder. The findings presented may be used to inform research, practice and policies aimed at improving mental health outcomes for children and adolescents with severe emotional and behavioral disorders.



## CHAPTER ONE

### PROBLEM STATEMENT

The landscape of the health care delivery system in the United States has undergone substantial change over the years. Central to these changes has been the adoption of managed care practices characterized by a move from inpatient to outpatient services beginning in the 1980s (Drake, 1997). The shift was precipitated by improvements in technology, expansion of outpatient facilities and endorsement from both public and private purchasers (Drake, 1997).

For consumers of inpatient psychiatric services specifically, the adoption of managed care practices meant that psychiatric hospitals became primarily concerned with stabilization instead of long-term treatment common in the pre-managed care era (Sharfstein, 2009). This shift translated to shortened lengths of stay and a reliance on community-based treatment options for mental health care for adult, child and adolescent patients (Lien, 2002). The changes also raised concerns about the impact of managed care practices on service utilization. To attend to these concerns, studies have examined trends in utilization rates and costs of inpatient mental health service use.

Studies focused on utilization trends and costs among children and adolescents have produced mixed results based on sample characteristics and time period studied (Case, Olfson, Marcus, & Siegel, 2007; Glied & Cuellar, 2003; Martin & Leslie, 2003; Pottick, McAlpine, & Andelman, 2000; Ringel & Sturm, 2001). Some studies noted significant declines in inpatient utilization rates among children and adolescents (e.g. Martin et al., 2003; Pottick et al., 2000) while another study found no significant changes between 1990 and 2000 (Case et al., 2007). Case's nationally representative study

reported that the proportion of hospitalizations increased significantly for children aged 6-13 while the proportion of utilization in other age groups fell. Findings of the study also indicated that the cost of inpatient care remained disproportionately elevated although there had been some decrease because of shortened lengths of stay and a focus on community-based treatment (Case et al., 2007). While lengths of stay declined by about 63% between 1990 and 2000 (Case et al., 2007), rates of rehospitalization nearly doubled (Heggstad, 2001; Lien, 2002; Wickizer, Lessler, & Boyd-Wickizer, 1999). These changes in the health service system (Drake, 1997) and high utilization rates and costs (Case et al., 2007) have resulted in increasing emphasis on the quality and effectiveness of specialty mental health services (Daniel, Goldston, Harris, Kelley, & Palmes, 2004). Rates of psychiatric hospitalization are therefore suggested as an indicator of the effectiveness of hospitalization (Romansky, Lyons, Lehner, & West, 2003; Thornicroft, Gooch, & Dayson, 1992).

Specifically, psychiatric rehospitalization is used as a gauge of treatment effectiveness and is considered an adverse treatment outcome because of the associated cost to society and families (Burns, Hoagwood, & Mrazek, 1999; Romansky et al., 2003), the emotional strain on families (Mohr & Regan-Kubinski, 2001) and its impact on provider morale (Lien, 2002). The financial burden of psychiatric hospitalization to society was estimated at \$1.2 billion in 2000 (Case et al., 2007). In regards to families, the financial burden of caring for a sick child is said to be more severe for families of children with mental health needs than for families caring for a child with other special health needs (Busch & Barry, 2007).

The emotional burden to families with a child diagnosed with a mental disorder is heavy and has been described as a grief process (Mohr et al., 2001). Parents have described their experience from recognition of the problem to post-hospitalization as exhausting, overwhelming and guilt-ridden (Mohr et al., 2001). There have also been reports of changes in the parent-child relationship following hospitalization (Mohr et al., 2001). Additionally, psychiatric hospitalization has been described as a stressful event for both patient and family that carries social stigma and the risk of possible, even though temporary, exclusion from society (Dauwalder & Ciompi, 1995). Finally, rehospitalization is said to have a negative impact on provider morale and confidence in the services they provide when their patients are repeatedly hospitalized (Lien, 2002).

Given the associated economic cost and emotional burden of hospitalization, psychiatric rehospitalization is an important mental health outcome that warrants further examination. The purpose of the current study is to examine the influence of clinician beliefs and family involvement on psychiatric rehospitalization.

### **Psychiatric Rehospitalization**

Studies have estimated that two in every one thousand children are psychiatrically hospitalized (Case et al., 2007) with rates of rehospitalization falling between 30% and 50% (Arnold, Goldston, Ruggiero, Reboussin, Daniel, & Hickman, 2003; Blader, 2004; Fontanella, 2008; Fontanella, Zuravin, & Burry, 2006). Recent data suggests that rates of rehospitalization are increasing despite cost containment efforts that have resulted in declines in long-term treatment and an emphasis on community-based treatment alternatives (Fontanella et al., 2006).

Because rehospitalization is considered an unfavorable mental health outcome, further investigation is needed to identify and understand its determinants. Therefore, rehospitalization has been the focus of research in a growing number of studies (Arnold et al., 2003; Blader, 2004; Chung, Edgar-Smith, Palmer, Bartholomew, & Delambo, 2008; Enns, Cox, & Inayatulla, 2003; Fontanella et al., 2006; Figueroa, Harman, & Engberg, 2004; Foster, 1999; James et al., 2010; Romansky et al., 2003; Wickizer, et al., 1999). Findings, though inconsistent, suggest that rehospitalization is influenced by individual family and service system factors. Contradictory and sometimes inconclusive findings are said to be the result of differences in research methodologies and operationalization of key variables (Fontanella, 2008).

Studies have found parental influences (Blader, 2004; Brinkmeyer, Eyberg, Nguyen, & Adams, 2004; Lakin, Brambila, & Sigda, 2004; Scharer & Jones, 2004), living arrangement (Romansky, et al., 2003), length of stay (Wickizer et al., 1999), post hospital service use (Foster, 1999; James et al., 2010; Romansky et al., 2003), parent professional collaboration (Green et al., 2001; Green et al., 2007) as well as psychiatric diagnosis and personal characteristics (Arnold et al., 2003; Foster, 1999; Romansky et al., 2003) to be significant predictors of psychiatric rehospitalization among youth.

Contradictory findings may signal a need for further identification and understanding of predictors of psychiatric rehospitalization among children and adolescents. Further study may offer guidance for preventative and rehabilitative efforts toward reducing rates of rehospitalization. Specifically, a systematic examination of clinical factors influencing rehospitalization can lead to strategies for improving youth outcomes.

This study specifically focuses on the impact of clinician beliefs and family involvement on psychiatric rehospitalization. Clinician beliefs about parents are said to translate into behaviors toward parents in mental health treatment for their children, which in turn may impact the degree to which parents become involved in treatment (Baker, Heller, Blacher, & Pfeiffer, 1995; DeChillo, 1993; Kaas, Lee, & Peitzman, 2003). Parental involvement in treatment is an important consideration as it is a factor that has been shown to influence child mental health outcomes (Brinkmeyer et al., 2004; Green et al., 2007; Parmelee, Cohen, Nemil, & Best, 1995; Prentice-Dunn, Wilson, & Lyman, 1981).

What remains unknown is whether clinician beliefs directly influence mental health outcomes for children and adolescents and whether family involvement, expanded in this study to examine parent perceptions of clinician helping behavior in addition to parent participation in inpatient activities, influence mental health outcomes for children and adolescents. The proposed study improves on current work by examining the impact of clinician beliefs and family involvement on psychiatric rehospitalization among children and adolescents.

### **Clinician Beliefs**

The concept of clinician beliefs about parents of children with emotional and behavioral disorders refer to their attributions about the role of parents in the etiology of their children's mental health problems (Heru & Berman, 2008; Johnson et al., 2000; Kaas et al., 2003). Additionally, clinician beliefs may also be about parents as experts about their children, information sharing with parents (Johnson et al., 2003) and parental

involvement in treatment (Baker et al., 1995; Heru & Berman, 2008). Although little is known about what mental health professionals believe of families of persons with emotional and behavioral disorders, knowledge of their beliefs is important because perceptions or beliefs about parents may affect clinician behavior toward parents and may influence whether parents are encouraged or discouraged to become engaged in the treatment of their children (Kaas, 2003).

A direct link between clinician beliefs and mental health outcomes has not been empirically established in the literature. However, a relationship between clinician beliefs and family involvement in care has been cited (Baker, et al., 1995; Kaas, 2003), though by very few studies. Instead, most studies examining clinician beliefs about parents and their behaviors toward parents have only provided information on clinician beliefs about parents and beliefs about what constitutes appropriate treatment of families in care, not actual clinician behaviors toward parents (e.g. Johnson et al., 2003).

The service organization, within which clinicians provide care, however, has been cited as a predictor of mental health outcomes (Glisson & Hemmelgarn, 1998). In the context of the service system, the organizational social context in which mental health services are provided is said to affect both service delivery and health outcomes because it includes the norms, values, expectations, perceptions, and attitudes that affect relationships between service providers and consumers (Glisson, 2007). An organization's culture and climate are aspects of the organizational social context (Glisson, 2007) that delineates expectations and reflects the way in which service activities are conducted and the manner in which employees perceive the impact of their work environment on them (James, James, & Ashe, 1990). In the context of mental health

service organizations, clinician actions in treatment may reflect the organizations' culture and climate which are both shown to impact health outcomes.

There are indications in the literature that organizational characteristics such as culture and climate are linked to the quality of care and outcomes of children's services. Service quality and outcomes are said to be affected by organizational culture and climate independent of the level of education, training and years of experience of service providers and the characteristics of the children and families receiving services (Glisson & Hemmelgarn, 1998). Clinicians are part of organizations and are expected to implement organizational policies on providing family-centered care. As such, their views on the degree to which parents should be involved in treatment may in fact reflect the organization's culture and climate which is shown to directly impact mental health outcomes.

Clinician beliefs are also important to examine because they form an important part of parent-professional collaborative process in treatment (DeChillo, 1993). This parent-professional collaborative process is said to be an important feature of inpatient psychiatric treatment that may influence outcomes for youth following hospitalization (DeChillo, 1993). For instance, studies examining determinants of health gain and costs found that positive therapeutic alliance predicted better health outcomes for psychiatrically hospitalized children and adolescents (Green et al., 2001; Green et al., 2007).

It has been suggested that when mental health professionals provide adequate information and support to parents the partnership role is strengthened (Sharer, 2002). In particular, families are more involved in inpatient activities, like discharge planning

(DeChillo, 2003), which supports better patient functioning after discharge and reduces rehospitalizations (Blader, 2004; Romansky et al., 2003). Additionally, the parent professional relationship helps to clarify the nature of the youth's problem, facilitates sharing methods of successful behavior management and provides directives to parents concerning post-discharge medication compliance and behavior management protocols (Scharer, 1999). These activities reduce the risk of further deterioration in the child's functioning (Scharer, 1999).

Additionally, mental health care professionals appear to be well aware of the importance of involving families in the care of patients. In fact, the importance of family involvement in the treatment for children and adolescents has been endorsed by social work in child welfare and mental health (National Child Welfare Resource Center for Family-Centered Practice, 2000; Early & GlenMaye, 2000; Callahan & Lumb, 1995), the National Institutes of Mental Health (Johnson et al., 2003) and numerous research studies (e.g. Blader, 2004; Brinkmeyer et al., 2004; DeChillo, 1993; Green et al., 2001; King, Hovey, Brand & Ghaziuddin, 1997; Kroll & Green, 1997; Parmelee et al., 1995; Prince, 2005; Sharer & Singleton, 2004). Despite such endorsements, there continues to be a gap between the value placed on collaboration with families and the actual occurrence of such collaboration (Kaas et al., 2003).

### ***Neurobiological Revolution and Clinician Beliefs***

The discrepancy between literature and policies supporting family involvement in treatment for youth and family involvement practices may in part exist because of literature suggesting that a child may develop emotional and behavioral problems because of harmful or inadequate parental influences (Johnson et al., 2000). Ideas such as



these remain despite advances in research demonstrating how biological and environmental factors intersect to influence mental illness (Johnson et al., 2000). Furthermore, there is evidence to suggest that observable manifestations of psychiatric disorders are typically responsive to interactions between biological, psychosocial, and environmental forces instead of either biological or environmental only (U.S. Department of Health and Human Services, 1999). Environmental forces have actually been found to precipitate or exacerbate symptoms of biological disease already present in the brain and the central nervous system (U.S. Department of Health and Human Services, 1999).

To illustrate, a study of identical twins separated at birth demonstrated that emotional and behavioral similarities existed between identical twins separated at birth, reared by different families and having no contact until their thirties (Bouchard & Hur, 1998). In addition, other studies show that children can come out of terrible childhood circumstances as well-functioning adults, while children raised in healthy family environments may show serious emotional problems in adulthood (Elder, 1974; Werner, 1989). These studies reveal that biological and environmental risk and protective factors are the major characteristics associated with adult mental health or illness and not simply the result of dysfunctional versus functional families as once thought (Elder, 1974; Werner, 1989).

### ***Theoretical Orientation and Clinician Beliefs***

Clinician beliefs about parental roles in children's problems are said to be organized and form constructs that have some origin in various theoretical orientations of mental health professionals (Johnson, 1986). For example, the belief that emotional or

behavioral problems in children result from parental influences on the child's psychic development form a psychodynamic construct (Johnson, 1986). Second, the notion that emotional or behavioral problems exhibited by children are a result of their part in a dysfunctional family system and are symptom carriers of the system form a family systems construct (Johnson, 1986). Third, children who exhibit emotional or behavioral problems because they have learned that behaviors deemed problematic elicits rewards, form a behavioral construct (Johnson, 1986). Finally, a poor fit between the child and his/her environment (Thomas & Chess, 1984), and interactions between child neuropsychological deficits and environmental factors (Kagan, 1994) form a biopsychosocial understanding of child development (Johnson et al., 2000). These belief systems may influence perceived appropriate treatment of parents (Johnson & Cournoyer, 2003) and even translate to the degree to which families are actually engaged in their child's care (Biegel, Song, & Milligan, 1995; Johnson, Cournoyer, & Bond, 1995; Kaas et al., 2003; Mohr, 2000).

Caregivers continue to complain about attitudes of clinicians and their perceived lack of effort to involve them in treatment. Concerns cited include: (1) professional attribution of blame; (2) failure to share information; (3) lack of or unhelpful explanations about ways parents can support the child; (4) non-involvement in treatment decisions and (5) professional failure to value parental expertise about their children (Biegel, Song & Milligan, 1995; Johnson et al., 1995; Friesen, 1989; Mohr, 2000).

## **Family Involvement**

An examination of family involvement in treatment for youth is important because in the context of inpatient psychiatric treatment, decreases in internalizing problems for children in inpatient psychiatric care have been related to higher clinician ratings of parent engagement. Conversely, unfavorable outcomes at nine months follow-up were related to poorer parental engagement and increased dissatisfaction with the inpatient hospitalization experience (Brinkmeyer et al., 2004). Results of another study showed that improved outcomes for children and adolescents post-discharge were predicted by better parental collaboration in treatment (Green et al., 2001; Kroll et al., 1997). In fact, family involvement in care may be the most significant determinant of successful hospitalization for adolescents (Green et al., 2001; King et al., 1997; Pfeiffer & Strzelecki, 1990) because it may reduce rehospitalization risk and promote improved functioning post-discharge (Brinkmeyer et al., 2004; DeChillo, 1993; Green et al., 2001; Kroll et al., 1997; Parmelee et al., 1995).

Problems with family involvement have been noted despite evidence that it yields positive outcomes for youth and is an important aspect of treatment for children and adolescents in inpatient psychiatric care (Sharer, 2004). Specifically, the literature points to limited efforts to involve families in treatment on the part of mental health professionals. One such study found that of children admitted to an inpatient psychiatric facility only 3 families of 512 were involved in their child's treatment (Mohr, 2000). Families of patients across service settings and age groups also report limited involvement in the care of relatives. One study revealed failure on the part of the mental health professional to involve families in treatment of a family member. In this study,

caregivers reported a need for greater communication with professionals throughout the treatment process (Biegel et al., 1995). Similarly, Walker (2001) found that most of the caregivers in the study were dissatisfied with their level of involvement in the treatment of a relative. Caregivers noted that satisfactory involvement would have occurred in treatment if they felt that information was shared with them, if they felt included in decision making, if they were able to contact someone when needed and if services were responsive to their needs.

Family involvement in care has been defined in various ways in the literature, presumably to coincide with the unique characteristics of the health service systems being examined. However, broad definitions of family involvement exist and provide some guidance for how involvement may be operationalized across care settings. For example, family involvement has been generally defined as the active participation of parents and other caregivers in planning, implementing, and evaluating services for children with emotional and behavioral disorders. Further, caregiver involvement in treatment would include partnering with service providers to develop treatment goals, plan needed services, provide feedback about treatment and facilitate youth participation in treatment (McCammon, Spencer, & Friesen, 2001). Such a definition suggests that involvement includes a partnership between families and providers in addition to family participation in treatment activities.

Most research studies have however operationalized family involvement simply as parent participation in inpatient activities. In regards to family involvement in inpatient psychiatric settings for children and adolescents specifically, involvement has been operationalized mainly as parent visitation during hospitalization, participation in family

and treatment sessions (Brinkmeyer et al., 2004; Green et al., 2007; Green et al., 2001) and participation in treatment planning during hospitalization (Parmelee et al., 1995).

It would seem that given the general definition of family involvement, studies aimed at examining the impact of involvement on rehospitalization should consider more than just participation in inpatient activities. A more comprehensive operationalization of family involvement would also include some measure of the partnering process between mental health providers and families of patients in care. The nature of the partnership could serve as an indication of the extent of the family's inclusion in treatment.

There are several concepts mentioned in the literature that when operationalized include some aspect of family involvement in care. An examination of the literature on this topic revealed that concepts such as family engagement, family-oriented care, parent-professional alliance, parent-professional collaboration and family-centered care all include some aspect of family involvement when operationalized.

For instance, family involvement has been noted as one aspect of family-centered care which is characterized by: (1) respect for families; (2) honest communication between providers, patients and families; (3) willingness to build on identified strengths; (4) parent involvement in mental health treatment planning service and monitoring and (5) policies, program development, and delivery of care that all encourage collaboration among patients, families and providers (Ahmann & Johnson, 2000; Dyke, Buttigieg, Blackmore, & Ghose, 2006; Hara & Ooms, 1995; Neff et al., 2003; McCammon et al., 2001).

Although family involvement is just one part of family centered-care, it appears that it is an important aspect of family-centered-care. For instance, it is difficult to

imagine successful family involvement in treatment if parents were not respected by helping professionals and if honest communication between professionals and families was absent. Presumably such delineations are made to simplify what is naturally a complicated concept. In the current study, the aim was to expand the operationalization of family involvement by examining parent perceptions of mental health professionals' helping behaviors toward parents, in addition to parent participation in inpatient activities. This endeavor is important because an understanding of how families are involved in inpatient psychiatric care offers opportunities for optimizing treatment and is expected to shape the development of new interventions for children in inpatient psychiatric care (Brinkmeyer et al., 2004). Therefore, family involvement in treatment, in addition to clinician beliefs about parents was examined as predictors of psychiatric rehospitalization among children and adolescents.

### **Study Purpose and Significance**

This study examined the impact of clinician beliefs and family involvement on rehospitalization as well as the moderating role of clinician beliefs on the relationship between family involvement psychiatric rehospitalization. Study findings about the influence of clinician beliefs and family involvement on psychiatric rehospitalization may provide new ideas for targeted approaches aimed at preventing psychiatric rehospitalization. Approaches may include updating organizational policies to include training of clinicians in methods of family involvement. In addition, clinicians may be educated about the etiology of mental illness in youth and trained in appropriate actions toward parents during their child's treatment. Implementation of these strategies may

improve family involvement in treatment and reduce rates of psychiatric rehospitalization.

The current study adds to the limited body of literature on determinants of inpatient psychiatric rehospitalization among youth, specifically the impact of family involvement on psychiatric rehospitalization. Additionally, this study examines the influence of a conceptually compelling but not yet studied variable, clinician beliefs, on psychiatric rehospitalization

### **Theoretical Frameworks**

This study makes use of two theories to conceptualize its questions and design that includes Andersen and Newman's (1973) Behavioral Model of Health Care Utilization and Attribution Theory of Motivation and Emotion (Heider, 1958; Weiner, 1979).

#### ***Behavioral Model of Health Care Utilization***

Andersen and Newman's (1973) Behavioral Model of Health Care utilization provided the overarching framework to examine the impact of clinician beliefs and family involvement on psychiatric rehospitalization. Moreover, this model has been used in several studies as an explanatory framework for predicting psychiatric rehospitalization among children and adolescents (Cunningham & Freiman, 1996; Fontanella, Early, & Phillips, 2008; Foster, 1999; Pottick et al., 1999).

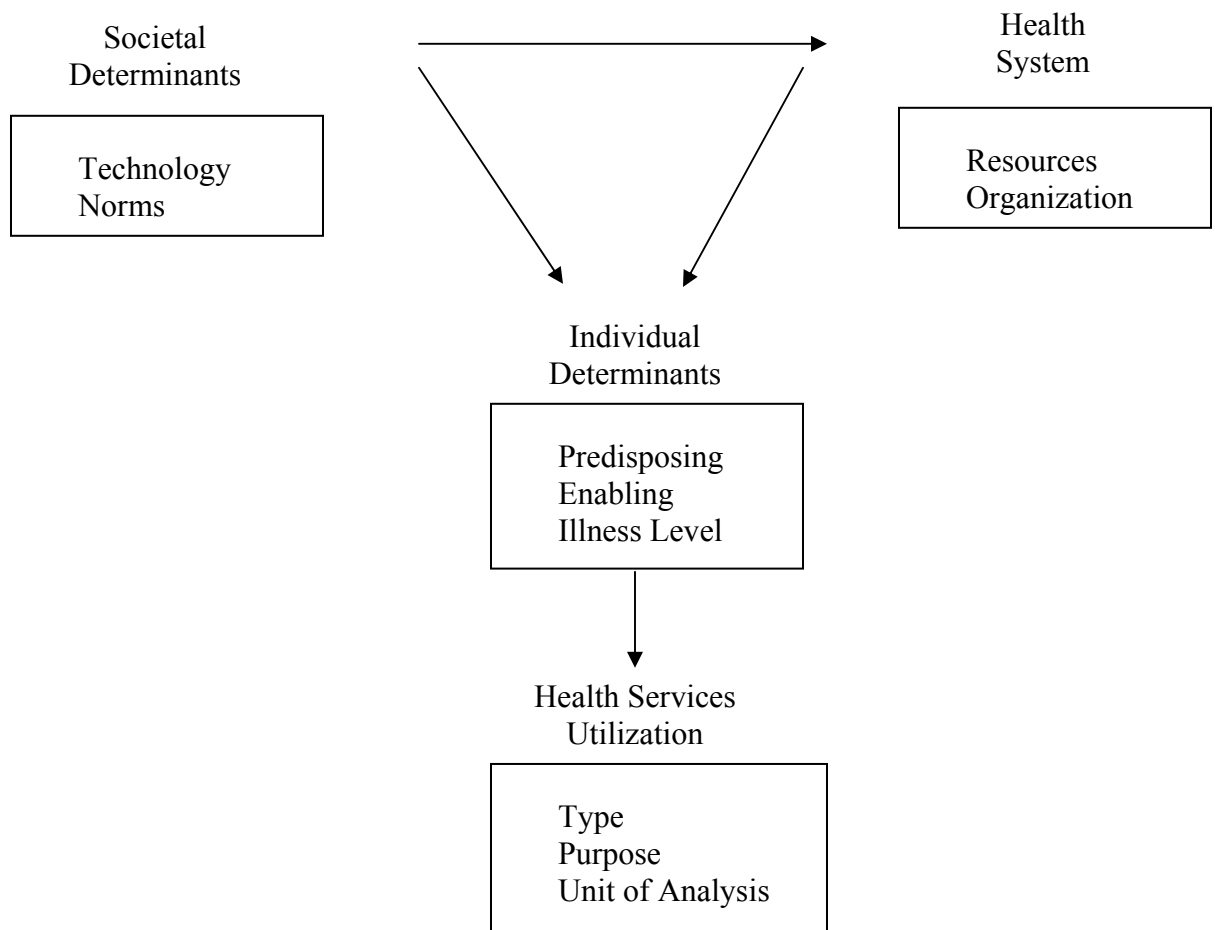


Figure 1 Framework for viewing health services utilization from Andersen and Newman (1973).

The model purports that societal determinants (technology and norms) and health service system factors (resources and organization), affect individual determinants of health care utilization which then affect utilization. How utilization is defined in a study is said to determine the configuration of all the other components of the framework. Specifically, it is proposed that a determination of the characteristics to be examined in relation to service use should be based on the type, purpose and unit of analysis of the



health service because it determines the configuration of the other components of the framework (Andersen & Newman, 1973).

The type of service include: hospital, physician, drugs and medication, dentist, nursing homes or other. The purpose of service utilization may be primary, secondary, tertiary or custodial. And finally, the unit of analysis of the health service, whether initial use or volume of use within a specific time frame. Because the configuration of the other components of the framework is influenced by decisions concerning how health service utilization is defined, this study sought to first define health service utilization then organize the other components of the framework to be examined in the study as recommended by Andersen and Newman (1973). It was recommended that once the health care service unit of analysis is primarily concerned with examining the number of services received in a given time period, characteristics of the provider and the health system in which the individual receives care should be considered because it is expected to determine volume of service utilization (Andersen & Newman, 1973).

Based on the above recommendation, clinician beliefs and their involvement of families in care (provider characteristics) will be considered as health service system factors affecting psychiatric rehospitalization (service utilization). The inclusion of these variables is justified because the health service utilization unit of analysis in this study is the number of psychiatric hospitalizations within a given time period. Andersen and Newman's (1973) model of health services utilization provides the framework for modeling clinician beliefs and family involvement in the context of psychiatric rehospitalization.

Health service system factors in addition to societal and individual factors as determinants of health service utilization have been examined in a number of studies (Andersen & Gelberg, 2008; Stein, Andersen, & Gelberg, 2007; Swanson Andersen, & Gelberg, 2003). The model of service use utilized in the above-mentioned studies categorized health service system factors as enabling factors affecting health service utilization. This study also categorized health service system factors as enabling factors affecting service utilization, and in addition, examined individual determinants of utilization.

The individual determinants of utilization fall into the broad categories of predisposing, enabling and need factors. Predisposing factors are said to be characteristics of an individual in existence before the precipitating event that predicts their propensity toward service use (e.g. demographic characteristics including age sex and history of illness, social structure including education and occupation, attitudes or beliefs about medical care, physicians, and disease). Enabling factors are the conditions that provide the means for a family to act on a value or satisfy a need (e.g. income, health insurance coverage/ third party payment, source of care including nature and accessibility of care source, availability of health facilities and personnel). Finally, need is the precipitating event leading to service use (e.g. perception of illness and clinical evaluation of illness to determine the nature and extent of care) (Andersen & Newman 1973). Various types of individual determinants are then said to influence health service utilization.

Combs-Orme, Chernoff, and Kager (1991) and Heflinger and Simpkins (2002) propose that models used to study health for vulnerable populations such as children and

adolescents, should combine child characteristics with provider, community or system variables. The authors suggest that approaches failing to use multi-determinant models to study health care are limited in their relevance to policy and practice. Therefore, this study sought to examine clinician beliefs and their involvement of families in treatment as health service system factors in addition to individual determinants affecting health service utilization among psychiatrically hospitalized children and adolescents.

### *Attribution Theory*

Attribution theory as proposed by Heider (1958) and Weiner (1979) provides a framework for conceptualization of the concepts of clinician beliefs and family involvement in care. This theory has been used as a framework for understanding professional helping behavior in a variety of health settings (e.g. Antshel, Brewster, & Waisbren, 2004; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Koekkoek, Hutschemaekers, van Meijel, & Schene, 2011; Kymalainen & Weisman, 2004).

Attribution theory was introduced to explain behaviors by understanding how people create causal explanations for their actions (Heider, 1958). The theory posits that people act based on their beliefs regardless of whether the beliefs are legitimate or not. Weiner (1979) suggests that to explain events people think in terms of internal-external, controllable-uncontrollable and stable-unstable factors.

According to Weiner (1979), external attribution has to do with the assignment of causality to agents, factors or forces that fall outside of the individual. By contrast, internal attribution refers to the assignment of causality to agents, factors or forces that are within the individual. Controllability has to do with whether an individual had any

control of the events surrounding a situation. Finally, stability is concerned with whether behavior is consistent over time because of values, beliefs, rules or laws influencing behavior in situations.

This study examines family involvement in treatment in the context of professional helping behaviors. Therefore, attribution theory provides a conceptual framework for understanding and discussing family involvement in treatment in this context. The theory does not guide the selection of study variables but offers a platform for discussion of key family involvement variables in the context of actions associated with clinician beliefs about parents of children with severe emotional and behavioral disorders.

The theory also provides justification for including family involvement in treatment as a health system variable. It is only through contextualization of family involvement using this theory that family involvement in treatment is able to be used as a health system variable based on the health services utilization model.

Additionally, attribution theory provides the context within which study findings can be discussed and recommendations can be made for use by practitioners and policy makers to identify specific interventions suitable for improving family-centered services for psychiatrically hospitalized children and adolescents.

The theory provides a basis on which to examine clinician beliefs about parents, involvement of families in care and individual determinants of psychiatric rehospitalization among children and adolescents.

## **Study Aims**

Based on the presented literature and theory, the study aims are as follows:

1. To determine if psychiatric rehospitalization of children and adolescents vary by clinician
2. To determine if a relationship exists between clinician beliefs and psychiatric rehospitalization of children and adolescents
3. To determine if a relationship exists between family involvement and psychiatric rehospitalization of children and adolescents
4. To determine if clinician beliefs moderate the relationship between family involvement and psychiatric rehospitalization among children and adolescents.

## **Significance to Social Policy**

High rates of psychiatric rehospitalization among children and adolescents have prompted interest in understanding predictors of rehospitalization. Such findings may lead to interventions that may decrease rates of psychiatric rehospitalization. Therefore, understanding the relationships between clinician beliefs, family-involvement and psychiatric rehospitalization in treatment is important.

Study findings will aid in the development of policies and designing of services that are responsive to established scientific evidence demonstrating increased positive outcomes when families are involved in mental health treatment (Brinkmeyer et al., 2004; Dixon et al., 2001; Fallon et al., 2002; Penn & Mueser, 1996). Additionally, results of this study will inform the creation and improvement of organizational policies guiding the education and training of mental health staff in appropriate family interventions.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter provides a review of the theoretical and empirical literature relevant to this study. The first part of the chapter presents the literature on psychiatric rehospitalization among children and adolescents. Second, clinician beliefs and its relationship to family involvement are addressed. In addition, this section will include a review of the concept of family involvement and the relationship between family involvement and psychiatric rehospitalization. Last, a synthesis of the literature on other determinants of rehospitalization is presented.

#### **Literature Review Methodology**

A review of the research helped determine the scope of the peer reviewed literature relevant to the key study concepts (Glatthorn & Joyner, 2005). Database searches were the first step in the review of the literature. When available, the most recent peer reviewed literature was selected from databases such as EBSCO, Google Scholar, ERIC, Social Work Abstracts, PsychINFO, PsychBOOKS, PsychEXTRA, SocINDEX, Health Source, and CINAHL. In addition, the review included the use of printed journals and classic texts.

The literature examined psychiatric rehospitalization as an important mental health outcome; predictors of psychiatric rehospitalization, in particular mental health professionals' beliefs about user involvement in treatment and family involvement in treatment.

## **Psychiatric Rehospitalization**

Studies have examined psychiatric rehospitalization rates and timing among children and adolescents. The results of these studies vary based on sample characteristics and the length of follow-up subsequent to discharge from an inpatient psychiatric unit. While only few studies have examined psychiatric rehospitalization as an outcome of inpatient treatment for children and adolescents, many of these studies report that the months immediately following discharge are the highest rehospitalization risk period.

In an investigation of rates and predictors of psychiatric rehospitalization, adolescents were followed for up to 10.3 years after discharge from an inpatient psychiatric unit. The results of the study indicated that during the follow-up period, 79 children (44%) had been rehospitalized. Of those rehospitalized, 19% were rehospitalized within the first six months following discharge from a psychiatric unit (Arnold et al., 2003).

Studies with shorter follow-up periods report that the highest rehospitalization risk period is within the first 15-90 days post discharge. One such study evaluated the effect of a managed care program on patterns of psychiatric readmission (Fontanella, Zuravin, & Burry, 2006). The study results indicated that of 881 adolescents on Medicaid, one year cumulative rates of readmission were 33% and 38% for the years 1997 and 1998 respectively. In this study, the highest risk period was noted to fall between 15-30 days after hospitalization.

Similarly, Fontanella (2008) investigated predictors of readmission to inpatient psychiatric care among 522 adolescents enrolled in Medicaid across three inpatient

psychiatric settings in Maryland. Through the use of archival data, it was observed that 38% of 522 adolescents enrolled in Medicaid were rehospitalized within one year after discharge. The majority (57%) of rehospitalizations occurred within three months after discharge from the inpatient psychiatric facility. A one year follow-up study of 109 children discharged from inpatient psychiatric care also found that 37 % of the sample had been rehospitalized. Interestingly, 81% of the rehospitalizations occurred within 90 days after discharge (Blader, 2004). Romansky, Lyons, Lehner and West (2003) also noted that of 500 children and adolescents in state custody, 21.4% had been psychiatrically rehospitalized within three months of discharge from an inpatient facility.

Finally, one of the most recent studies examining predictors of psychiatric rehospitalization among children and adolescents had similar findings. In a study of 186 children and adolescents who were hospitalized for severe emotional and behavioral disorders, 43% of youth were psychiatrically rehospitalized at follow-up. The risk of rehospitalization was noted to be highest during the first month following discharge and remaining elevated for three months post discharge (James et al., 2010).

High rehospitalization rates in the months immediately following discharge raise questions about the effectiveness of inpatient psychiatric treatment and about the care the child or adolescent received during the intervening period. It should be noted that the quality of inpatient treatment is especially important given how soon after discharge rehospitalization takes place in a substantial number of cases. However, a focus on clinical predictors of rehospitalization does not diminish the importance of post-discharge services, medication compliance and other child and family characteristics that may influence rehospitalization.



Guided by the above findings, this study examined predictors of psychiatric rehospitalization during the first 90 days following discharge from inpatient psychiatric care. Specifically, the study examined clinician beliefs and family involvement in treatment as two clinical factors that may influence psychiatric rehospitalization among children and adolescents.

### **Clinician Beliefs**

Clinician beliefs about parents of children with emotional and behavioral disorders are thought to impact family involvement in care, a variable shown to be an important predictor of mental health outcomes for youth. Because of the potential impact of clinician beliefs on family involvement in treatment, knowledge of clinician beliefs about parents, an understanding of factors that support such beliefs and the impact of these beliefs on family involvement in care are important.

Regarding what clinicians believe about parents of children with emotional and behavioral disorders, it has been posited that families may be avoided in treatment because clinicians may believe that parents are the cause of mental illness observed in children (Heru & Berman, 2008). Unfortunately, clinicians continue to believe that parents are responsible for mental illness in children despite their knowledge of the role of biological factors, for example, in such illness. Attributions about parental responsibility in their children's mental health conditions are said to negatively affect the care provided to patients and families as they do not support family involvement in care and are not in line with current theory and research about the cause of emotional and behavioral problems in children (Rubin et al., 1998). Clinician beliefs that parents are the

cause of emotional and behavioral problems in children and adolescents may be reinforced in part by their encounters with children who have suffered abuse in their homes (Collins & Collins, 1994). Such encounters may lead clinicians to believe that children's problems are connected with that of parents. Thus, clinicians experience difficulty maintaining a non-judgmental posture when working with parents thought to have negative influences on their children (Collins & Collins, 1994).

For instance, in a study of clinicians and mothers of children with emotional and behavioral problems, it was noted that clinicians attributed greater responsibility for child problems to mothers than mothers attributed to themselves. In addition, clinicians considered mothers as observers as well as participants in child problem behavior. Interestingly, although much of the responsibility for child problem behavior was thought to be caused by mothers, clinicians also assigned most of the problem solving responsibility to mothers (Pottick et al., 2001).

Clinician beliefs that parents bear responsibility for emotional and behavioral problems observed in children cannot be entirely dismissed as the family does have some influence on emotions and behavior. However, it is important to acknowledge that interactions between biological, psychosocial and environmental factors are responsible for manifested psychiatric illness as opposed to biological or environmental only (U.S. Department of Health and Human Services, 1999). Therefore, in addition to providing treatment aimed at managing biological challenges related to such illness, clinicians have some basis on which to also include families in treatment.

While the family may have some influence on child emotional and behavioral problems, it is still concerning that clinicians continue to have such negative beliefs about

parents particularly because their beliefs about parents are thought to be the strongest predictor of collaboration between clinicians and families (DeChillo, 1993). For instance, clinician beliefs and prejudices were found to be unwittingly imposed on consumers in an alcohol and drug treatment program resulting in a lack of collaboration (Curtis & Harrison, 2001). Furthermore, conflict between families and clinicians was noted to occur in an inpatient setting, in part, because professionals failed to listen to family members, discredited family experiences with the patient, responded defensively to questions and inadequately prepared families for patient discharge (Rose, Mallinson, & Walton-Moss, 2004). It has been suggested that clinician recognition of the knowledge and expertise of consumers is necessary for successful collaborations in mental health settings (McCloughen, Gillies, & O'Brien, 2011).

Clinician values about family involvement in treatment their attitudes toward specific parents and their willingness to speak with parents and work jointly with parents is said to shape family involvement in treatment for children in care. It was suggested that in addition to other factors, negative beliefs held by clinicians posed a hindrance to family involvement in therapeutic foster care (Jivanjee, 1999).

An examination of social workers' beliefs and attitudes about families in care also revealed that clinician beliefs about parents were related to what clinicians believed to be appropriate treatment of families. The findings lend support to other studies suggesting that clinician beliefs about parents translate into clinician behaviors in treatment. Specifically, the study found that respondents who disagreed with statements attributing blame to parents endorsed information sharing with parents, thought that parents were doing their best and that parents were credible sources and experts about their child.

Conversely, participants who believed that the family was to blame for problems in children did not support information sharing with parents, did not think that parents were doing the best for their children or that parents were experts about their own children (Johnson et al., 2003).

In addition to identifying clinician beliefs about parents, an understanding of the factors contributing to these beliefs is important because it provides avenues for intervention. Interventions may be focused on encouraging more positive clinician beliefs about parents thereby improving collaboration in treatment and ultimately youth outcomes. Clinician training has been identified as one factor influencing clinician beliefs about parents of children with severe emotional and behavioral disorders.

### ***Clinician Training***

Clinician training in professional academic programs and in the work place is said to provide information that sometimes reinforce negative beliefs about families of persons with emotional and behavioral problems (Heru et al., 2008; Kaas et al., 2003). For example, one study found that clinicians endorsing a neuropsychological orientation had the lowest agreement with blaming parents for mental illness in children. Conversely, highest agreement with parent blaming was observed among endorsers of ego psychological/psychoanalytic, existential and family systems models (Johnson et al., 2000). In addition, another report suggested that psychiatry residents were taught how to avoid working with families, therefore, avoiding routine family contact and dealing with the most difficult families out of necessity. Such encounters were said to reinforce beliefs that families are the problem (Levine & Zuckerman, 1990).

The need for staff to be trained to have more positive attitudes toward parents has been raised in an effort to improve treatment outcomes (Baker et al., 1995; Jivanjee, 1999). Training is necessary because involving families in treatment with the goal of improving care for patients is not a natural or obvious process and may not be a priority for many professionals (Romi & Melamed, 2007).

One study pointed to the need for staff to be trained about the importance of families to improving treatment outcomes. It was suggested that training may result in more positive attitudes toward parents. This observation was made in response to study findings from a residential treatment setting demonstrating that staff showed support to parental involvement in the capacity of service recipients and less as decision makers. It was also found that when staff demonstrated positive attitudes toward family involvement in treatment, the strongest predictors of such positive attitudes were beliefs that family involvement was advantageous and support of fewer reasons to discourage family involvement in care (Baker et al., 1995).

It is important to note that the need for clinician training to cultivate positive beliefs about parents thereby facilitating successful involvement of families in treatment is also shared by clinicians. Clinicians also recognize their need for additional skills and experience to deal with the extent of family needs in treatment. Specifically, clinicians have expressed how unsure they feel about how to help families particularly when their efforts to help feel ineffective (Collins & Collins, 1994; Rose et al., 2004). Training efforts mandated by professional practice and supported at the organizational level may have great impact on clinician beliefs about families of patients in treatment and may lead to increased positive collaborative endeavors and improved outcomes for youth.

### *Organizational Support*

In addition to clinician beliefs about parents Jensen (2004) suggests that health system-based factors also represent one of the many barriers to successful family involvement in psychiatric settings. A study of psychologists in inpatient psychiatric settings revealed that work overload, time constraints, administrative work and vague boundaries among mental health professions, presumably concerning whose responsibility it is to involve families in care, present some of the greatest challenges to family involvement. Organizational changes were noted as key to improving communication between administrators, directors and psychologists as well as between psychologists and other disciplines thereby ameliorating the lack of care to families (Carosso, 2000).

The findings of the above study were echoed in another inpatient psychiatric setting in which health care professionals reported several health system factors that hindered family involvement in treatment. These barriers were identified as: a lack of organizational support, poor coordination of services, limited skill and experience in family care, inadequate staffing, outdated educational materials, a focus on crisis care and shorter lengths of stay. It was also suggested that the organizational system impeded provision of family care through a lack of reward or recognition for family work, few opportunities for skill development, issues of patient confidentiality, lack of physical space and limited time to engage families in treatment (Rose et al., 2004).

The many organizational challenges highlighted by health professionals are indicative of insufficient support for family involvement in treatment within organizations (Kaas et al. 2003; Rose et al. 2004; Winefield & Burnett 1996). Thus, to

improve clinician beliefs about families and increase family involvement in treatment changes must be made and sustained at the organizational level.

### ***Perceived Impact of Families on Treatment***

In addition to clinician training and organizational influences, clinician beliefs about parental involvement in treatment are also influenced by the perceived impact of family involvement on treatment. Clinicians have cited concerns about conflict between families and patients (Jivanjee, 1999; Sjöblom et al., 2005), perceived negative impact of family involvement on treatment (Rubin et al. 1998; Winefield & Burnett 1996) and patient confidentiality (Heru et al., 2008; Jakobsen & Severinsson 2006; Pejler 2001; Rose et al. 2004) as reasons for negative perceptions about parental involvement in treatment. Clinicians also perceive family involvement as a conflict of interest in treatment and feel caught in the middle in such instances. These perceived negative consequences of treatment may point to limited training in regards to involving families in treatment nevertheless, they continue to limit clinician efforts to involve families in care (Jivanjee, 1999). Professionals also seem to be concerned that family involvement may be counter-therapeutic, particularly in regards to record sharing with parents and how parental involvement in treatment will affect the child's disclosure and trust (Collins & Collins, 1994). Furthermore, clinicians express fears of losing control in treatment as another reason why they may hold beliefs that do not support family involvement in treatment (Heru et al., 2008).

It should be acknowledged that although most of the work presented here has focused on how clinician beliefs about parents influence involvement, family factors also

play an important role in their involvement in treatment. For instance, both clinicians and parents may believe that parents are to blame for mental illness. It is reasonable to say that if professionals believe that parents are the cause of emotional and behavioral problems in children, then parents may also hold such beliefs. The negative beliefs on the part of professionals and parents may therefore contribute to challenges to involve families in treatment.

To illustrate, Collins and Collins (1994) noted that when the cause of a problem is clearly biological, parents are less defensive and more willing to be involved in treatment. Presumably, parents are less defensive because a biological origin of a problem not only reduces feelings of guilt for parents but also changes clinician attitudes toward parents that may result in less defensive parent attitudes. Likewise, when clinician behaviors toward families in treatment are based on a clear biological origin of mental illness, the treatment setting may be more conducive to parental involvement in care. Therefore, it may be clinician and family influences together that make a difference in family involvement in treatment.

### **Family Involvement**

Numerous studies have documented the benefits of family involvement in the care of persons with mental illness and have reported positive outcomes when families participate in the treatment of people with serious emotional disorders (Dixon et al., 2001; Falloon, Roncone, Held, Coverdale, & Laidlaw, 2002). In fact, family involvement in psychiatric treatment has been shown to aid in assessment and treatment planning, and



has also been associated with increased satisfaction for patients and their families (Prince, 2005).

The literature points to increased benefits of mental health services to children when their families are actively engaged in such services (Hoagwood, 2005; McKay & Bannon, 2004). There is increased likelihood that treatment will benefit children when families are involved because access to services depends on key adults that have the ability to either promote or undermine the benefits of treatment (Angold, Messer, Stangl, Farmer, Costello, & Burns, 1998; Farmer, Burns, Angold, & Costello, 1997; Pescosolido, 1992; Romanelli et al., 2009). Given the facilitative and/or gate keeping role of families in the receipt of mental health care for youth, families are, by extension consumers of such services and therefore need to be involved in the determination of how services are provided (Singh, Wechsler, & Curtis, 2000).

While many studies have examined and confirmed the importance of family involvement in mental health care for children and adolescents because of its link to outcomes, only few have examined this relationship in the context of its impact of psychiatric rehospitalization.

Pfeiffer and Strzelecki (1990) reviewed 34 studies on residential and inpatient psychiatric treatment for children and adolescents. The results of the review indicated that family involvement in treatment was not widely studied as a predictor of treatment outcomes for youth. Only one study (Prentice-Dunn, Wilson, & Lyman, 1981) identified in this early review examined this relationship. The study found that a positive relationship existed between parental involvement in treatment and improvement in behavioral ratings for children.

Other studies found that improved outcomes at follow-up among children and adolescents who were psychiatrically hospitalized were predicted by better parental collaboration and family engagement in treatment as measured by the Family Engagement Questionnaire (Brinkmeyer et al., 2004). The parent section of the FEQ used in the abovementioned study included the general parent alliance scale which was a clinician rated measure of the frequency with which the parents visited the unit and participated in family and treatment sessions. Clinicians also reported how open parents were to discussing family problems with unit staff and parent hostility toward unit staff (Kroll & Green, 1997).

Similar findings came out of a study of 90 children and adolescents admitted to two state-operated psychiatric hospitals that were followed from the time of their admission through one year post discharge. The study concluded that the two strongest predictors of more positive outcomes for children and adolescents, as measured by the Child Behavior Checklist, were residing with a family member at the time of the hospitalization and the family's participation in treatment planning during the hospitalization (Parmelee et al., 1995). In this study, family involvement was operationalized as the involvement of family or a juvenile court representative in treatment planning during the child's hospitalization. Similarly, Green et al. (2007) found that improved outcomes for children and adolescents in psychiatric care at follow-up were predicted by better parental collaborative alliance with treatment as measured by the Family Engagement Questionnaire (FEQ).

Finally, in an investigation of predictors of health gain among children and adolescents in an inpatient psychiatric setting, Green et al. (2001) found that parental

therapeutic alliance independently predicted health gain. Parent therapeutic alliance with treatment staff was also measured using the family engagement questionnaire (FEQ).

### ***Family Involvement in Outpatient Settings***

While only few studies have examined the relationship between family involvement in care and psychiatric rehospitalization of children and adolescents, several studies have examined the impact of family-based interventions in the treatment of children and adolescents in non inpatient settings and have demonstrated the resulting positive outcomes.

Results of a randomized clinical trial conducted by Liddle, Rowe, Dakof, Ungaro and Henderson (2004), in which family-based therapy and group therapy were compared in an outpatient sample of adolescents, indicated that the family-based treatment was significantly more effective in the treatment of substance abuse and behavioral problems in that population. Parental involvement was also shown to be a significant predictor of readmission to residential care treatment facilities. Lakin, Brambila and Sigda (2004) observed that among 89 children and adolescents admitted to a residential care facility, lower readmission rates were noted for children whose parents were more involved in treatment. Parental involvement in treatment included family therapy sessions, weekly visits, telephone calls, and arranged home visitations for children. Children of parents who were more involved in treatment had made more gains at discharge

In addition, results of a recent study conducted by Blader (2004), investigating timing and predictors of psychiatric readmission for 109 children within one year of discharge, found that lower levels of parental involvement in child non clinician activities

were associated with higher risk of rehospitalization in this population. This study made use of the Alabama Parenting Questionnaire (APQ) to examine the association between risk of psychiatric readmission and parental factors including parental involvement. The APQ is a measure of parenting practices that are considered to be related to disruptive child behaviors (Shelton, Frick, & Wootton, 1996). The APQ has 42 items scored from 1 (never) to 5 (always) in five domains: positive parenting, poor monitoring, inconsistent discipline, involvement and corporal punishment.

Although family involvement in inpatient psychiatric settings is of primary importance in this study, the above findings coincide with findings in inpatient settings suggesting that family involvement in treatment impacts mental health outcomes for children and adolescents.

### ***Predictors of Family Involvement***

In addition to underscoring the importance of family involvement in mental health treatment for children and adolescents and its impact on psychiatric readmission, studies have also examined family level factors that influence their involvement in treatment. These factors, though not of primary interest in this study do provide vital information about other important determinants of family involvement. It should be noted that the studies included here were concerned primarily with factors affecting parental involvement in outpatient settings, however, their potential relevance to the inpatient psychiatric setting warrant their inclusion in this discussion.

Studies have found that parental attributions of the cause of mental illness and their expectations concerning the ability of treatment to improve problems, influence help seeking behavior, treatment involvement and outcome (Morrissey-Kane & Prinz, 1999).

Garcia and Weisz (2002) interviewed 344 parents of children and adolescents receiving mental health treatment services in California to investigate factors associated with premature drop out. The results of the study indicated that family (sick family member, transportation problems, staff and appointment problems), clinic practical problems (clinic staff appearing to be uninterested or incompetent, appointment schedules at inconvenient times), time and effort (too much travel time involved), perceptions that treatment was not needed (child got better), and money issues (misunderstanding over fees) were all related to dropout rates. Therapeutic alliance and money issues were shown however to be the only significant predictors of drop out. While the results of this study point to parent challenges that predict drop out, the inclusion of this study is important because drop out is an indication of the discontinuation of parent involvement in the care of the child or youth. Therefore it can be argued that predictors of drop out are also predictors of participation in treatment.

An early study conducted by Kazdin, Holland and Crowley (1997) examined barriers to parent participation in outpatient mental health treatment of children and found that barriers to participation in the treatment process were the basis of drop out in that group. The findings successfully highlighted the common barriers faced by parents of children and adolescents with emotional and behavioral problems that influence both drop out and treatment participation. This study surveyed 242 families of children receiving services in an outpatient treatment facility. The families included in this study

had all initiated services from a triage center in a child psychiatric service that referred children with oppositional, aggressive, and antisocial behavior to a conduct clinic. Barriers to parent participation in treatment included stressors, obstacles associated with coming to treatment, perceptions that treatment was not relevant, and poor parent-therapist relationship. Socioeconomic disadvantage, family circumstances (younger mother, single-parent families, and adverse childrearing practices) and parent history of mental illness were also found to be barriers to parent participation in treatment and therefore formed the basis of drop out. These identified family variables are important factors affecting family participation in the treatment of children and adolescents and can serve to expand understanding of predictors of family involvement in care.

It should be noted that recommendations for the inclusion of families in the mental health treatment of children and adolescents are supported by research findings suggesting that treatment may have limited applicability particularly with young children in the absence of parental involvement (Freeman et al., 2003) and that the inclusion of family in the treatment of adolescents helps them overcome resistance to treatment as well as reinforces treatment success (Liddle et al., 2004). Hibbs and Jensen (1996) suggest that the importance of the involvement of families in the treatment of children and adolescents with emotional and behavioral disorders is underscored by the fact that more than half of the child-focused National Institute of Mental Health (NIMH) funded intervention models included a family component.

The literature presented suggests that family-based interventions for children and adolescents with emotional and behavioral problems may produce positive outcomes for this population. Family based interventions include, family therapy and any other

treatment for children and adolescents that invite and encourage the participation of the family in or throughout the treatment process. It is also suggested that family involvement in inpatient psychiatric settings may influence psychiatric rehospitalization of children and adolescents.

### **Predictors of Rehospitalization**

A number of demographic, clinical and service use factors have been identified as predictors of psychiatric readmission among children and adolescents. A synthesis of the literature on these factors is presented because they provide information valuable for model building activities relevant to this study.

#### ***Demographic and Child Clinical Factors***

Some studies examining demographic variables as predictors of psychiatric rehospitalization found age (Arnold, et al., 2003; Fontanella, 2008; Foster, 1999) gender (Fontanella, 2008; Foster, 1999) and ethnicity (Pavkov, George, & Lee, 1997) to be associated with readmission. However, other studies have failed to find any such association between these demographic variables and rehospitalization (Blader, 2004; Fite, Stoppelen, Greening, & Dhossche, 2008; Romansky et al., 2003).

In regards to clinical variables the literature suggests that the presence of affective (Arnold et al., 2003), oppositional defiant, conduct (Chung et al., 2008) and psychotic behaviors (Pavkov et al., 1997) are associated with rehospitalization. Also associated with rehospitalization are externalizing (Blader, 2004; Fite et al., 2008), co-occurring internalizing and externalizing (Fite et al., 2008) as well as developmental delay and

histories of recent violent behavior (Fontanella, 2008). Only few studies found no association between diagnosis and rehospitalization (Bobier et al., 2005; James et al., 2010; Romansky et al., 2003).

### *Post-discharge Service Use and Medication Compliance*

The relationship between post-discharge service use and psychiatric rehospitalization remains unclear although there is some indication in the literature that post-discharge service use may reduce rehospitalization risk (James et al., 2010; Romansky et al., 2003).

James et al. (2010) showed that post-discharge use including a combination of intensive and non intensive outpatient mental health services, outpatient mental health services only and other support services, reduced rehospitalization risk by over 70 percent among children and adolescents. Other studies have found that children readmitted to inpatient psychiatric care received fewer post hospital treatment hours than those not readmitted (Romansky et al., 2003) and that higher rates of rehospitalization were noted among those who did not receive post-discharge services when compared to those who did (Solomon et al., 1993). Interestingly, high readmission rates were prevalent even among those who did receive aftercare services, thus raising questions about the suitability of aftercare services (Solomon et al., 1993). Though some studies have found a relationship between post-discharge service use and rehospitalization, other studies have found no such relationship (Foster, 1999). One study found that less involvement in after care services did not increase rehospitalization risk (Blader, 2004) suggesting an appropriate match of care to need.



Medication non-compliance is another important factor noted in the literature to be associated with readmission. Results of several studies indicated that readmission to psychiatric care was related to medication non-compliance (Bobier & Warwick, 2005; Fontanella, 2008; Perkins, 2002). One study found that readmission was more likely than sole admission to have medication non-compliance as a cause (Bobier & Warwick, 2005).

### ***Previous Hospitalization***

Previous hospitalization has also been noted as an important predictor of psychiatric rehospitalization (Chung et. al., 2008; Heflinger, Simpkins, & Foster, 2002). One study showed that previous inpatient psychiatric care increased the likelihood of subsequent hospitalization by 19% (Heflinger et al., 2002). Other studies have failed to find such a relationship when extraneous variables were controlled in multivariate models (Fontanella, 2008).

### ***Length of Stay***

The relationship between length of stay and readmission has been established across several studies however, the directionality of the relationship remains unclear. Studies examining this relationship have identified both long (James et al., 2010; Fontanella, 2008; Pavkov et al., 1997) and short (Wickizer et al., 1999) lengths of stay to be predictive of rehospitalization. James et al. (2010) observed that for each additional day in treatment, the risk of rehospitalization increased by 17%. Pavkov et al., (1997) found that for every additional 10 days in the length of hospitalization, the likelihood of

re-entry increased by 2%. Similarly, youth with longer lengths of stay (greater than 18 days) were shown to be 2.3 times more likely to be readmitted than those with shorter lengths of stay (1-5 days) (Fontanella, 2008). Wickizer et al. (1999) suggest that when cost containment strategies reduce lengths of stay for children who are in need of additional attention in the acute psychiatric setting, rehospitalization is likely to occur (Wickizer et al., 1999). Only one study found, failed to identify a relationship between length of stay and psychiatric rehospitalization. Blader (2004) in a study of predictors of readmission to inpatient psychiatric care for children aged 5-12, found no association between length of stay and psychiatric readmission.

Differences across results do not necessarily invalidate the findings; instead, they may point to substantive differences in sample characteristics, that when examined, may provide some context for the various findings. For example, when short lengths of stay predict rehospitalization this finding may be considered in the context of premature termination of necessary acute psychiatric services (Wickizer et al., 1999) and when longer lengths of stay predict rehospitalization, the relationship may be considered an indicator of problem severity (Fontanella, 2008).

### **Conclusion**

Based on the studies presented in this chapter, it is clear that the identification and examination of factors influencing psychiatric readmission of children and adolescents is not straightforward. The differences in the operationalization of key concepts and differences in methods of observation have produced inconsistent and sometimes contradictory results making it difficult to choose study covariates.

Despite the complexity of this endeavor and the state of the research findings on this topic, clinician beliefs and family involvement remain important factors that when examined may provide information about if and how they impact mental health outcomes for youth. Study results may provide some much needed insight concerning what clinician beliefs are about parents, whether their beliefs are related to psychiatric hospitalization and which aspect of the expanded operationalization of family involvement predicts psychiatric rehospitalization. In addition, study findings will also add to the knowledge on the relationship between demographic, clinical, service use, and post-discharge service use factors influencing psychiatric rehospitalization among youth.

## **CHAPTER THREE**

### **METHODS**

The study was conducted in four phases and employed multiple methods of data collection to answer the questions of interest. This chapter provides a description of the research questions, hypotheses that were tested and the methods used in this study.

#### **Research Questions and Hypotheses**

The study relied on hypothesis testing to answer the questions of interest. Hypotheses were formulated to represent the anticipated relationships among examined variables. Throughout this study the outcome variable, rehospitalization, is operationalized as rehospitalization status (yes/no) and timing to readmission during the highest readmission risk period of 90 days following discharge.

The research questions and hypotheses are as follows:

RQ 1: Does psychiatric rehospitalization of children and adolescents vary by clinician?

H1: Psychiatric rehospitalization varies by clinician

RQ 2: Does a relationship exist between clinician beliefs and psychiatric rehospitalization of children and adolescents?

H1: Negative clinician beliefs will predict higher likelihood of psychiatric rehospitalization

RQ 3: Does a relationship exist between family involvement in care and child and adolescent psychiatric rehospitalization?

H1: Higher family involvement in care will be associated with reduced likelihood of psychiatric rehospitalization

RQ 4: Do clinician beliefs moderate the relationship between family involvement and psychiatric rehospitalization?

H1: Negative clinician beliefs weaken the relationship between family involvement and psychiatric rehospitalization.

### **Study Site**

The study was conducted on the child and adolescent inpatient psychiatric units at a large psychiatric facility in Southern California. The hospital is a private nonprofit institution providing psychiatric treatment on an inpatient and outpatient basis across all age groups. The child and adolescent programs housed at this facility include inpatient psychiatric care, partial hospitalization (PHP) and intensive outpatient programs (IOP). The center is one of two remaining comprehensive psychiatric facilities serving children (8-13) and adolescents (14-17) in the host county, and is the only facility in the immediate region providing inpatient services to children.

### **Study Design and Overview of Study Procedures**

This prospective study was conducted in four phases and collected data from parents and caregivers, primary clinicians and patient medical records (See Table 1). All procedures described below were approved by the Loma Linda University Office of Sponsored Research Institutional Review Board (IRB). A detailed discussion of study procedures is presented by phases of data collection.

Table 1

*Overview of Study Procedures by Phase*

Phase	Sample	Method	Measure
I	Parents	Survey	Researcher created items on family involvement and Helping Behavior Checklist (HBCL) (Cournoyer & Johnson, 1991)
II	Clinicians	Survey	Providers Beliefs About Parents (PBAP) (Johnson, Cournoyer & Fisher, 1994)
III	Parents	Telephonic (Mail in survey when not reached by phone)	Child and Adolescent Services Assessment (CASA) (Ascher, Farmer, Burns & Angold, 1996)
IV	Children and adolescents	Medical record review	Abstraction Instrument

The study made use of a convenience sample of 167 parents and caregivers of child and adolescent patients and a purposive sample of 27 clinicians from the multidisciplinary clinical team providing services. Parents and caregivers of children and adolescents included in the study had to meet the inclusion criteria. First, the child or adolescent patient was below age 18 at the time of admission, and remained a minor for the study duration. This criterion eliminated the need to re-consent participants who became adults during the course of the study. This was particularly important because of the anticipated follow-up phases of the data collection process. Second, the child or adolescent was not in out-of-home care (e.g., foster care, group home) at enrollment. Children in out-of-home care were excluded from the study because of the possible absence of a regular caregiver to provide data at follow-up. Additionally, inclusion of children currently in out-of-home care would require in some instances, court approval.

Efforts to seek court approval would not have been feasible given time and budget constraints.

Finally, the child or adolescent patient met the criteria for admission and was hospitalized for at least 24 hours. The 24 hour minimum hospitalization requirement for enrollment in the study had several purposes. Parents of children enrolled for less than this time would be presumed to have very limited opportunity for involvement in treatment especially if the child was admitted during weekend hours. If a child was admitted to the unit during the weekend, once the length of stay exceeded 24 hours the parent would presumably receive treatment opportunities for involvement comparable to children admitted during the week. This inclusion criterion was intended to limit differences in the sample on the basis of weekend versus weekday hospitalization, without making it too difficult to achieve the desired sample size.

### *Training*

Following institutional review board (IRB) approval of the study, training of research assistants commenced. Seven research assistants, including one Spanish speaking assistant, were recruited from the department of Social Work and Social Ecology at Loma Linda University. All research assistants were Master of Social Work students and were recruited through departmental email and personal communication. To reduce threats to the internal validity of the study, research assistants were trained by the principal investigator in relevant data collection methods throughout the study duration.

All research assistants completed, and kept current, the requirements for the year long Protection of Human Subjects certificate offered through the National Institutes of

Health. Research assistants received and reviewed the research study proposal along with samples of the measurement instruments to be used in the study. They received multiple training sessions that covered participant recruiting methods, consent procedures, instrument administration, research ethics, and cultural competence.

Training focused on understanding of survey questions, survey question response patterns, data tracking and entry methods and the importance of complete data. Regular meetings were conducted to address challenges associated with data collection, to review collected data for quality and to make necessary adjustments (Rubin & Babbie, 2008). Assistants were also trained on Health Information Portability and Accountability Act (HIPPA) requirements concerning how patient information was to be handled throughout the course of the study. The outlined training served to minimize threats to the reliability of the data (Rubin & Babbie, 2008).

### *Phase I*

#### **Study Procedures**

In this phase of the data collection process, data was collected from parents about their involvement in treatment and clinician helping behaviors toward them during their child's hospitalization. To inform parents of the study being conducted, invitation flyers in both English and Spanish were placed on the child and adolescent units. The flyers informed parents that they may be invited to participate in the study during their child's discharge. Parents of all children and adolescents scheduled for release during the data collection period were to be invited to participate in the study by discharge personnel, e.g. unit secretaries, therapists, nurses. Contact was initiated and maintained with



discharge personnel on the child and adolescent unit to facilitate data collection during this time. This was a critical part of the data collection process because it facilitated management of challenges arising throughout the data collection process, and was necessary to regularly provide new research packets and collect completed ones.

Participants received research packets from discharge personnel and were responsible for determining their own eligibility based on the inclusion criteria noted in the consent form. Once the inclusion criteria was met, participants were instructed to continue to the remaining IRB approved consent document, disclosure of patient health information form and finally to complete the questionnaire. Parents completed a questionnaire which asked questions about their participation in various hospital activities relevant to the child and about their perception of clinician helping behavior during their child's treatment. An adapted and pilot tested version of the Helping Behavior Checklist, (HBCL) (Cournoyer & Johnson, 1991) was used in addition to questions about parent participation in inpatient activities.

A pictorial roster of clinicians was included in the research packet to aid parents in identifying their child's primary mental health caregiver during the hospitalization period. As part of the consent, participants provided permission for medical record review and agreed to be contacted at three month follow-up. In addition to an English version, the survey was also available in Spanish.

## **Measure**

### ***Family Involvement***

A family involvement index was created using the participation variables. Parents received a score of one for each inpatient activity they participated in including if they visited their child during the hospitalization period. Hospital activities included parent visitation, participation in treatment planning, discussions about treatment progress and challenges, family sessions and discharge planning. The scale ranges from 0-5, with 0 indicating no visitation during the inpatient stay and no participation in any other activity. A score of 5 indicated a parent's participation in all inpatient activities during their child's hospital stay

### ***Parent Perception of Clinician Helping Behaviors***

Parental perceptions of clinicians' helping behaviors were measured using the Helping Behavior Checklist developed by Cournoyer and Johnson (1991). The HBCL is a 28-item scale designed to measure parents' perceptions of behaviors of mental health professionals who serve them in relation to problems manifested by their children. The questions are presented as statements describing behaviors that clinicians could display. The instrument allowed parents to assess statements about the clinician's helping behavior to determine if they were true. Parents were then able to choose from the following Likert-scale options: almost always true, often true, seldom true, and almost never true and yes, no and unsure with higher scores indicating agreement. The instrument included questions describing the service provider, child and parent and

allowed parents to report their satisfaction with their child's progress. Table 2 contains only the questions used for data analysis in this study.

Survey questions were guided by behaviors described in codes of ethics of the National Association of Social Workers (NASW), National Federation of Societies of Clinical Social Work (NFSCSW), American Psychological Association (APA), American Psychiatric Association (APA; based on codes of the American Medical Association), American Association for Marriage and Family Therapy (AAMFT), and American School Counselors' Association (ASCA) (Cournoyer & Johnson, 1991).

The sample used to validate the instrument included social workers, psychiatrists, medical doctors, school guidance counselors, family therapists, nurses and clerical staff. Significant test-retest correlations were obtained for 22 of the 28 items in the instrument and ranged between .30 to .86 (Cournoyer & Johnson, 1991). According to Cournoyer & Johnson, (1991) the intended use of the HBCL is to examine individual items rather than scale or whole test scores therefore reliability and construct validity were not assessed for the instrument. To manage this challenge, factor analytic work was done on this instrument, the results of which will be discussed in the latter part of this section. The questionnaire was pilot tested prior to use in this study.

## *Phase II*

### **Study Procedures**

In Phase II of the study, a measure of clinician beliefs about parents was used to collect data from clinicians identified as the primary clinician by parents during their child's hospitalization.

Table 2

*Helping Behavior Checklist (HBCL)*

Subscale	Items
Supportive	<p>Was courteous</p> <p>Explained clearly what I needed to do to help my child</p> <p>Understood what I have been going through</p> <p>Treated me like an expert about my own child</p> <p>Took time to answer my questions or listen to my ideas</p> <p>Valued my opinion about my child</p> <p>Provided services which helped my child</p> <p>Indicated to me that I was doing the best for my child</p> <p>Cared how I felt</p> <p>Was honest and up-front with me</p>
Transparent	<p>Refused to provide reasonable access to records I asked to see</p> <p>Do something that harmed my child</p> <p>Discriminated against me because of race, culture, religious beliefs, sexual orientation or socio-economic status</p> <p>Give information about my child or me to someone without my permission</p> <p>Refused to serve my child when I complained about something</p>
Empower	<p>Inform me about risks associated with treatment</p> <p>Help me make decisions about treatment</p> <p>Give accurate information about how services would help my child</p> <p>Indicated to me the importance of my involvement in my child's continued treatment and recovery</p>
Unsupportive	<p>Didn't involve me in important decisions concerning my child's treatment</p> <p>Provided services that didn't help</p> <p>Blamed me for my child's problem</p> <p>Implied my emotions were harming the child</p>
Responsive	<p>Help me find services when he/she couldn't help</p> <p>Continue to provide services when they were no longer helpful</p> <p>Refer your child or you to any other service either for additional diagnostic information or for a service that he or she couldn't provide</p>

The study was introduced to clinicians during various staff meetings, organizational email and through personal communication. Questionnaires were presented to clinicians during staff meetings, and an email invitation with a link to the online survey was sent to clinicians not reached at staff meetings. Clinician supervisors also made contact with clinicians who could not be reached during staff meetings or did not respond to email invitation. Clinicians completed an adapted and pilot tested version of the Provider's Beliefs About Parents (PBAP), an instrument on clinician beliefs about the etiology of mental illness and appropriate treatment of parents during care of their children (see Table 3). An implied consent process was utilized where consent was assumed based on the completion and return of the survey. This study collected data from 27 clinicians. The study was endorsed by the host facility and efforts to recruit clinicians were supported by staff and other relevant facility personnel.

## **Measure**

Clinician beliefs about parents of children and adolescents in care were measured using an adapted version of the Providers' Beliefs About Parents (PBAP) Questionnaire (Johnson et al., 1994). The PBAP questionnaire was designed to evaluate beliefs of service providers concerning the role of parents in a child's emotional problems and about what constitutes appropriate provider behavior toward parents (Johnson et al., 1994). This instrument was developed as a complementary instrument to the HBCL and was intended for use in assessing various aspects of the collaborative process between parents and health professionals.

Table 3

*Provider Beliefs About Parents (PBAP)*

Subscale	Items
Blame	<p>The most frequent cause of disturbed behavior in a child is poor parenting skills</p> <p>Family dynamics are usually the major cause of children's emotional disorders</p> <p>Psychiatric problems in children can usually be traced to pathological parenting</p> <p>The most frequent cause of emotional problems in children is emotional dysfunction in the parents</p> <p>The most frequent cause of severe emotional disturbance in children is parenting behavior</p>
Inform	<p>All parents should be told the specific ways treatment is expected to help their child</p> <p>Professionals should share just about everything they know about a child's psychiatric disorder with parents</p> <p>Mental health professionals should almost always be honest and up-front with parents</p> <p>Clients should routinely be informed about the costs and payment plans for services</p> <p>It is usually advisable to give parents unlimited access to a child's records</p>
Validate	<p>Parents are experts about their own children</p> <p>Parents have expertise that mental health professionals do not have</p> <p>Most parents of emotionally disturbed children are doing their best for their child</p> <p>Parents are seldom experts about their children unless they have had professional training</p> <p>Parents of children who need mental health services are usually too emotionally involved to report their children's behaviors accurately</p> <p>Parents of an emotionally disturbed child often can teach professionals what responses are helpful to their child</p>
Instruct	<p>It is seldom advisable to tell parents explicitly what to do to help their child</p> <p>It is therapeutically sound to tell parents directly what they should do to help their child</p>

The instruments share concepts such as blame, information sharing, validation of parent's views and expertise, parental involvement in treatment planning and implementation, instructing parents about how they can help their child and associated concerns (Johnson et al., 1994).

Instrument development and testing made use of experienced social worker, social work students, special education teachers, clinical psychologists, family therapists, vocational rehabilitation counselors, nurses, school guidance counselors and others, with an average of 10.7 years of professional practice. A total of 37 items were Likert-scaled with four possible answers: 1 strongly agree, 2 agree, 3 disagree, and 4 strongly disagree.

Reliability and construct validity tests of the instrument were conducted by the authors and resulted in five principle components (Blame, Inform, Validate, Medicate, Instruct) comprising 21 items with Cronbach's alpha ranging from .60 to .87. Test-retest reliability was moderate for the five factors ranging from .600 to .708 (Johnson et al., 1994). This instrument was adapted and pilot tested for use in this study. Specifically, the Medicate subscale was excluded because the questions did not correspond with any questions parents were asked on the HBCL. There was no indication in the validation process that the instrument was intended to be sum scored for use, therefore individual subscales were used for analysis.

### ***Phase III***

#### **Study Procedures**

In the third phase of the study at three-month follow-up, data was collected from parents of former child and adolescent inpatients on post discharge mental health service

use and on psychiatric rehospitalization status using an adapted version of the Child and Adolescent Services Assessment (CASA) (Ascher et al., 1996). This time period was used based on empirical findings from multiple studies, including one conducted at the target facility, which have identified the three- month period post discharge as the highest risk period for rehospitalization (Blader, 2004; Fontanella, 2008; James et al., 2010). Contact was reinitiated with parents of children and adolescents telephonically, to collect follow-up data using the adapted and previously pilot tested version of the Child and Adolescent Services Assessment (CASA) (Ascher et al., 1996) used by James et al. (2010). A Spanish version of the survey instrument was also made available to facilitate enrollment of a diverse group of respondents. Participants who could not be reached telephonically were mailed a research packet containing the CASA and a pre-addressed and pre-stamped envelope. Participants receiving questionnaires by mail were required to return the completed survey within one month of its receipt and were offered a ten dollar gift card as an incentive. The response rate for the mailed survey was low (12.5%), the details of which are discussed further in the ensuing chapter.

## **Measure**

The CASA is an instrument designed to evaluate the use of mental health services among children and adolescents age 8-18. The instrument allows for parent or child reporting of services received across various providers (e.g. juvenile justice, mental health and health). The CASA has four sections: 1) the child health services screen, 2) the detailed child services form, 3) attitudes toward services and 4) family demographic and financial information.



The follow-up interview was used to collect data in phase three of the study. This version was developed to allow for the collection of services data across time. The interview began with an update of contact information for the parent and whether the child lived with the parent during the follow-up period. Parents were then asked to provide information about inpatient, outpatient, intensive outpatient, informal services or involvement with juvenile justice or child welfare systems. Reliability and validity testing indicated that the instrument has good psychometric properties with reliability being the highest for reporting on the most restrictive settings (Ascher et al., 1996). The follow-up interview section of the CASA used in this study has been adapted; pilot tested, and used in a study for data collection at the facility of interest, with nearly two hundred parent participants of children and adolescents (James et al., 2010). The wording was further modified for use as a self-report survey and was pilot tested before mailing.

#### *Phase IV*

##### **Study Procedures**

In this phase, data was collected from medical records of patients enrolled in Phase I of the study. As a means of data triangulation, abstracted data allowed for verification of demographic data provided by parents and facilitated the collection of diagnostic and other clinical data such as child diagnosis and length of stay. Following completion of Health Information Protection and Portability Act (HIPPA) training, on-site access to child and adolescent medical records was provided through facility records management.

The demographic variables of interest were child age, race and gender. Clinical variables included length of stay and diagnosis (Discharge Axis I). Psychosocial risk variables included parent history of mental illness, child history of sexual abuse, physical abuse, and violence in the home, history of abandonment, head trauma or seizures and drug and alcohol abuse. Service use factors included post discharge service use and previous hospitalization.

### **Measure**

The review instrument standardized data collection procedures on demographic, clinical and risk variables. The instrument has been pilot tested, modified and used to collect data on 186 parents of children and adolescents at the facility of interest in a previous study (James et al., 2010). Inter-rater reliability testing for that study revealed an agreement rate of .95 (James et al., 2010). Table 4 provides an overview of all study variables and their operationalization.

### **Data Analysis**

Data collection and data entry occurred simultaneously throughout the study allowing for examination of the quality of collected data and to make adjustments in the data collection protocol when necessary. SPSS 18.0 for Windows was used to create the data set and perform data screening and analysis. Data was screened for missing data, outliers, multicollinearity and expected frequencies. Appropriate adjustments were made to prepare the data for the proposed statistical analyses which are discussed in the results section.

Table 4

*Overview of Study Variables*

Variable	Operationalization	Coding
Psychiatric Hospitalization	Dichotomous Yes/No	0=No 1=Yes
Clinician Beliefs	Days to Rehospitalization (PBAP) 1. Blame 2. Inform 3. Validate 4. Instruct	Continuous 0-90 1-Strongly agree 2-Agree 3-Disagree 4-Strongly disagree
Family Involvement	(HBCL) 1. Supportive 2. Transparent 3. Empower 4. Unsupportive 5. Responsive	1-Almost never true 2-Seldom true 3-Often true 4-Almost always true 1-No 2-Unsure 3-Yes (reverse coding on negative items)
Demographic Covariates	Parent visitation, participation in treatment planning, discharge planning, family sessions, discussions about treatment Age Gender 1. Female 2. Male Ethnicity 1. Black/AA 2. Latino 3. Caucasian 4. Asian/PI 5. Other	Combination of five dichotomous variables; possible range 0-5 Continuous 0=Male 1=Female Collapsed into dichotomous variable for analysis 0= Caucasian 1=Non/Caucasian
Clinical Covariates	Length of Stay during hospitalization of interest (LOS) Diagnosis 1. Internalizing Disorders 2. Externalizing Disorders 3. Both Internalizing and Externalizing Disorders	Continuous Collapsed into dichotomous variable for analysis 0=Both and Externalizing 1=Internalizing

Table 4 (Continued)

Psychosocial Risk Factors	Combination of risk factors (parent history of mental illness, child history of sexual abuse, physical abuse, and violence in the home, history of abandonment, head trauma or seizures and drug and alcohol abuse)	Continuous possible range 0-5
Service Covariates- using CASA and medical record	Post discharge service use Yes/No  Previous hospitalization Yes/No	0=No, 1=Yes  0=No, 1=Yes

Note. PI=Pacific Islander; AA=African American.

Tables 3 and 4 below contain subscale items for the PBAP and HBCL

### *Factor Analysis*

Reliability and construct validity testing was conducted on the adapted Helping Behavior Checklist (HBCL) used in Phase I of data collection to elicit parent responses about professional helping behaviors. Data screening procedures were conducted, the results of which indicated the presence of missing data. In an effort to identify the source of missingness, a series of t-tests and nonparametric tests were conducted. The results of this process revealed no pattern in the missing data, which has been referred to as; “missing completely at random” (MCAR). About ten percent (n = 23.6) of data was missing. Due to the missingness and the MCAR pattern of missingness, mean imputation was used to replace missing values within individual items.

Prior to the exploratory factor analysis all negatively worded questions were reverse coded. A Principal component (PCA) analysis was conducted on 30 items. Initial measurements indicated that the sample size was adequate for factor analysis (Kaiser-

Meyer-Olkin = .813) and the test of sphericity ( $\chi^2 (435) = 2374.669, p < .001$ ) indicated that correlations between the items were sufficiently large for PCA. When all 30 items were allowed to load onto factors freely, eight factors were extracted. These eight factors had Eigenvalues over 1 and in total explained 62.64% of the variance. While the 8-factor structure is plausible, these eight factors produced a considerable degree of cross loading of items, and two factors having only one unique item loading. In addition, two of the items failed to load onto any factor. Furthermore the Oblique rotation failed to converge, and the extracted factors were not seen to be supported by previous research. See Table 5 below for the unrotated factor loadings of the 30 items.

In an effort to extract a more parsimonious set of factors, and a set of factors validated by the current literature, it was determined that a five factor structure might fit the data better.

The current literature provides some support for a five factor structure as emotional support of parents (Espezel & Canam, 2003; Guliano, 2000; Regan, Curtin, & Vordere, 2006) actively sharing in the child's care (Espezel & Canam, 2003), communication between parent and provider, responsiveness, and honesty on the part of the provider (Regan et al., 2006) are important aspects of psychiatric treatment for youth and family.

Table 5

*Factor Loadings for Exploratory Factor Analysis with Oblimin Rotation of Helping Behavior Check List*

Item	Rotated Factor Loadings							
	F1	F2	F3	F4	F5	F6	F7	F8
Was courteous	.43							-.41
Explained clearly what I needed to do to help my child	.72							
Suggested that my skills as a parent contributed to my child's problem		-.45					.53	
Understood what I have been going through	.71							
Treated me like an expert about my own child	.69							
Took time to answer my questions or listen to my ideas	.70							
Didn't involve me in important decisions concerning my child's treatment		.52						
Provided services that didn't help		.55			-.47			
Valued my opinion about my child	.60							
Blamed me for my child's problem		.60						
Didn't seem to know very much about my child's problem		.49					-.48	
Provided services which helped my child	.66							
Indicated to me that I was doing the best for my child	.64							
Cared how I felt	.74							
Was honest and up-front with me	.58						-.41	
Implied my emotions were harming the child		.63						
Inform me about risks associated with treatment								
Help me make decisions about treatment	.48		.44		-.48			
Help me find services when he/she couldn't help	.51			.41				
Refused to provide reasonable access to records I asked to see		.50						
Do something that harmed my child		.55						.47
Discriminated against me because of race, culture, religious beliefs, sexual orientation or socio-economic status		.64						
Give accurate information about how services would help my child	.53							
Give information about my child or me to someone without my permission		.48			.48			
Refused to serve my child when I complained about something		.65						
Continue to provide services when they were no longer helpful								
Indicated to me the importance of my involvement in my child's continued treatment and recovery	.54							
Refer your child or you to any other service either for additional diagnostic information or for a service that he or she couldn't provide				-.59				
Overall, are you satisfied with your child's progress since treatment began	.42		.54					
Is your child doing as well as you think he /she could do?			.65					
Eigenvalues	6.54	3.96	1.84	1.65	1.36	1.27	1.13	1.01
% of Variance	21.80	13.22	6.15	5.51	4.54	4.24	3.78	3.37
$\alpha$	.88	.81	.66					

Note. Blank cells indicate that the item did not load unto any factor.

Furthermore two of the 30 items seemed to be more relevant as outcome measurements rather than distinct latent factors. These two factors asked the respondent to report their satisfaction with their child's progress since treatment began and whether the child is doing as well as the parent thinks he/she could do. Given the limitation of the 8-factor structure and the tendency in the literature to support a 5-factor structure, a second PCA process suppressed the extraction to five factors, and utilized an oblique rotation (Oblimin).

Preliminary results of the second PCA found that the sample size was adequate (KMO=. 817) and the correlations between items were significantly large (Bartlett's test of sphericity  $\chi^2(378) = 2222.963, p < .001$ ). The extracted five factors explained 52.7% of the variance. The scree plot showed inflexions that would justify retaining 5 components. Additionally the factor structure was able to converge with the oblique rotation constraint.

Given these steps in the analysis a 5-factor, oblique rotation was determined to be the most parsimonious representation on the underlying latent factor structure within the HBCL. Table 6 below shows the factor loadings after rotation.

Given the item loading structure of each factor the researcher determined that Factor 1 represents an emotionally supportive clinician, Factor 2 represents a transparent clinician, Factor 3 represents an empowering clinician, Factor 4 represents a non-emotionally supportive clinician and Factor 5 a responsive clinician. See Table 6 below for the item loadings and subsequent factor loadings. Two items failed to load onto any factor and were excluded for all subsequent analyses.

Table 6

*Factor Loadings for Exploratory Factor Analysis with Oblimin Rotation of Helping Behavior Check List*

Item	Rotated Factor Loadings				
	Supportive	Transparent	Empower	Unsupportive	Responsive
Was courteous	.53				
Explained clearly what I needed to do to help my child	.77				
Suggested that my skills as a parent contributed to my child's problem					
Understood what I have been going through	.83				
Treated me like an expert about my own child	.75				
Took time to answer my questions or listen to my ideas	.67				
Didn't involve me in important decisions concerning my child's treatment				-.77	
Provided services that didn't help				-.78	
Valued my opinion about my child	.68				
Blamed me for my child's problem				-.63	
Didn't seem to know very much about my child's problem					
Provided services which helped my child	.62				
Indicated to me that I was doing the best for my child	.60				
Cared how I felt	.70				
Was honest and up-front with me	.62				
Implied my emotions were harming the child				-.61	
Inform me about risks associated with treatment			.63		
Help me make decisions about treatment			.62		
Help me find services when he/she couldn't help					.54
Refused to provide reasonable access to records I asked to see		.66			
Do something that harmed my child		.67			
Discriminated against me because of race, culture, religious beliefs, sexual orientation or socio-economic status		.82			
Give accurate information about how services would help my child			.46		
Give information about my child or me to someone without my permission		.59			
Refused to serve my child when I complained about something		.61			
Continue to provide services when they were no longer helpful					.59
Indicated to me the importance of my involvement in my child's continued treatment and recovery			.57		
Refer your child or you to any other service either for additional diagnostic information or for a service that he or she couldn't provide					.75
Eigenvalues	6.32	3.96	1.66	1.51	1.28
% of Variance	22.58	14.16	5.95	5.40	4.60
$\alpha$	.88	.76	.66	.75	.57

Note. Blank cells indicate that the item did not load unto any factor.



Subscales 1-5 all have good to high reliabilities, with Cronbach's  $\alpha$  at .884, .760, .665 and .753 respectively. However, subscale 5 had a negative Cronbach's  $\alpha$  of -.746 indicating negative average covariance, which violates reliability model assumptions and therefore is an implausible solution. After recoding the item with the negative Cronbach's  $\alpha$ , the reliability improved for this scale - Cronbach's  $\alpha$  = .574 - and negatively loaded items on factor five became positive. All other factors remained the same.

### ***Primary Statistical Analyses***

Data collected from clinicians and caregivers presented a nested data structure where parent respondents were nested under their child's primary clinician during hospitalization. This called for Hierarchical Linear Modeling, which has several advantages over traditional approaches, such as addressing non-independent observations. However, several challenges arose that made this approach difficult. First, the initial sample size (n=200) was small because of limitations of resources and time and was even further reduced with the exclusion of cases for which respondents failed to identify a primary clinician (n=26), missing data and outliers (n=7). Additionally, the structure of the data indicated that there was an inconsistent number of parent respondents nested under the various clinicians.

And finally, the results of the analysis of variance (ANOVA), the first step in the modeling process and the first research question, indicated that the reliability of the model was low ( $\alpha$  .30) suggesting that it was not prudent to proceed with further testing using this analytic method. These results are referred to but not presented in the results

section because the test could not be reliably performed. Based on the limitations of sample size, sample structure and the low reliability of the initial step in the hierarchical linear modeling process all subsequent study hypotheses were tested using logistic regression analyses.

Logistic regression is an appropriate analytic method for testing the study hypotheses because it allows testing of the relationship between a dichotomous grouping dependent variable and both ordinal and continuous predictor variables (Peng, Lee, & Ingersoll, 2002; Tabachnick & Fidell, 2007). This method provides information about which independent variables in a model are the best predictors of a discrete outcome such as rehospitalization (yes/no). Logistic regression is a robust method of analysis that does not require the fulfillment of the assumptions of normality, linearity or equality of variances of predictor variables (Mertler & Vannatta, 2005; Tabachnick & Fidell, 2007).

Logistic regression aims to produce a regression equation that will accurately predict whether an individual will fall into one category (e.g. rehospitalized) or another (non-rehospitalized) (Mertler & Vannatta, 2005). Logistic regression will demonstrate how accurately rehospitalization status can be predicted based on a given set of variables. If the equation significantly predicts the likelihood of rehospitalization the findings can inform policies and program interventions and improve mental health outcomes for youth. Logistic regression produces an odds ratio that demonstrates whether variables increase or decrease the probability of the outcome occurring, or whether there is no change when the predictor is introduced. The odds ratio assists the researcher in understanding what impact the predictor variable has on rehospitalization status. As such

odds ratios help in the interpretation of the findings and provide a basis for discussion about the identified significant relationships.

## CHAPTER FOUR

### RESULTS

This chapter presents the results of all data analytic activities carried out for this study. The first part of this chapter will discuss the nature of the data. The results of tests for missing data and the handling of such data will then be discussed. Further descriptive findings will be presented followed by the results of the primary analyses used to test study hypotheses. The final sections of this chapter include a summary of the study findings.

#### **Data**

During the course of data collection, complete data was not collected for some participants in various phases of the study. This section discusses these challenges and how they were handled to facilitate planned data analysis.

#### ***Participant Drop Out***

Of the two-hundred study participants enrolled in phase one of the study, 37 % (n=74) could not be reached at three month follow-up. A mail-in version of the CASA was sent out in both English and Spanish in an effort to collect data from this group. Of the 74 research packets mailed, 13.5 % (n=10) returned as undeliverable. Of the remaining 64 surveys, 12.5% (n=8) were completed and returned. Overall, 67 % (n=134) of the follow-up data was collected.

To manage this volume of missing data and to facilitate data analysis, post discharge service use data, previous hospitalization and rehospitalization status data

already collected from patient medical records were used for cases that did not have follow-up data available from the CASA. Some differences may have been present between data collected from medical records on the above-mentioned variables and data collected on the same variables through follow-up methods. In the case of post discharge service use, previous hospitalization and rehospitalization status, the medical record may have been limited to services received at the indexed facility only and may not provide information on services received at other similar facilities for emotional and behavioral problems.

Because the above-mentioned variables were constructed from data collected at follow-up and medical record data for the missing cases, tests were performed to determine whether the variables were significantly related to follow-up data completion on the CASA. If significant relationships were observed between the variables and follow-up data completion status, then it suggested that the use of medical record data made the variable unreliable for use in the study.

Because of the high percentage of missing data, chi-square tests were performed for the three variables that were constructed using follow-up data and medical record data for missing cases. There was a non significant association between CASA completion and psychiatric rehospitalization status ( $\chi^2(1) = 1.883, p .170$ ) and between CASA completion and previous hospitalization status ( $\chi^2(1) = .659, p .417$ ). However, there was a significant relationship between CASA completion and post-discharge service use ( $\chi^2(1) = 68.949, p <.000$ ). Because of the significant relationship between post discharge service use and CASA completion, post discharge service use was not used in any of the study analyses. This is a limitation of the research that will be addressed in Chapter 5.

### *Missing Data*

Once data missing due to drop out was substituted with medical record data, tests of missingness were conducted on data collected in all phases of the study. To identify sources of missingness, a series of chi-square, t-tests and nonparametric tests were performed. Details of these procedures are discussed in order of the phases in which the data was collected.

Of the two-hundred participants completing the parent questionnaire in Phase I of the study, 13 % (n=26) of the cases failed to identify a primary clinician during the hospitalization period and were excluded from further analysis. This decision was made to ensure that all clinicians whom parents responded about were included in the study. In instances where a clinician was not identified, no clinician could be invited to participate in the study. The missing data reported below reflects data for the initial one hundred and seventy-four cases retained for analyses.

For parent data collected in phase one of the study, there was no pattern in the missing data; therefore the missingness was considered missing completely at random (MCAR). Descriptive results indicated that data was missing on all the variables used to create the family involvement index (visitation, participation in treatment planning, discussions about treatment, family sessions and discharge planning). Of the data collected, 2.4% of parent responses were missing for visitation, 5.3% for participation in treatment planning, 4.7% for discussions of treatment progress and challenges, 6.5% for family sessions and 7.1% for participation in discharge planning. Chi square tests were performed for participation in family sessions and discharge planning because more than 5% of the data was missing. Tests results revealed that there was a non significant

association between parent participation in family sessions and psychiatric rehospitalization ( $\chi^2(1) = .157, p = .692$ ). There was also a non significant relationship between participation in discharge planning and psychiatric rehospitalization ( $\chi^2(1) = .620, p = .431$ ).

On average about 10% ( $n = 23.6$ ) of data was missing on the HBCL. Due to the missingness and the MCAR pattern of missingness, mean imputations were used to replace missing values within individual items.

For clinician data collected in Phase II of the study, the results indicated the presence of missing data on all variables. All factors except Instruct had 1.1% ( $n=2$ ) of data missing. Clinician profession had 1.8% ( $n=3$ ) of data missing. Because of the low percentage of missing data on these factors and clinician profession there were no tests of missingness. The factor Instruct had 6.9% ( $n=12$ ) of data missing. Because of the high percentage of missing data chi-square tests were performed. There was no significant association between Instruct and psychiatric rehospitalization status ( $\chi^2(1) = .226, p = .806$ ). Due to the missingness and the MCAR pattern of missingness, mean imputation was used to replace missing values within the variable.

For follow-up data collected in Phase III of the study, the results indicated the presence of missing data. The data collected on the psychiatric rehospitalization, variable and previous hospitalization was missing only 1.7% ( $n=3$ ) of the data. Because of the low percentage of missing data on this variable, there were no tests of missingness. The decision was made to delete the three cases where no data was available on psychiatric rehospitalization.

For medical record data collected in phase four of the study, the results indicated the presence of missing data: Data was missing for diagnosis (4.0% n=7), gender (6% n=1), psychosocial risk (4.0% n=7) and length of stay (LOS) (4.6% n=8). Because of the low percentage of missing data on these variables no tests of missingness were conducted.

### ***Outliers Multicollinearity and Expected Frequencies***

Although there are no assumptions to be met prior to conducting logistic regression analysis, issues concerning multicollinearity, outliers and incomplete data on predictors were examined and managed before proceeding. Preliminary multiple regression was conducted to calculate Mahalanobis distance (to identify outliers) and to examine multicollinearity among the predictors. The Explore procedure was then conducted to identify outliers. Four subjects with Mahalanobis distance greater than  $\chi^2(13) = 34.528$  were eliminated.

A series of multicollinearity tests were conducted corresponding to variable combinations needed to answer the research questions. Multicollinearity tests of all clinician, family involvement variables and covariates showed that tolerance for all variables was greater than .1 indicating that multicollinearity is not a problem.

Descriptive statistics indicated small frequencies on some categories of child ethnicity and diagnosis, and clinician profession. The decision was made to collapse categories on these variables thereby making them dichotomous to facilitate planned logistic regression analyses. Child ethnicity was categorized as Caucasian/Non-Caucasian with Caucasian as the reference category. Child diagnosis was dichotomized as both



internalizing and externalizing disorder and/externalizing disorder/internalizing disorder with the former category as the reference group. Clinician profession was dichotomized as RN/non-RN with non-RN as the reference group.

It should be noted that individual subscales were used to test the study hypotheses instead of sum scores on the PBAP and HBCL because each subscale represents a different clinician belief or clinician helping behavior as reported by the parent. Following the deletion of variables with missing data on the criterion and outliers, 167 cases were retained for analysis.

### *Sample Characteristics*

This section provides an overview of the sample characteristics, univariate tests between the predictor variables and psychiatric rehospitalization, descriptive findings of the main predictor variables as well as child characteristics broken down by rehospitalization status. Descriptive results presented in Table 7 revealed that females represented the majority (68%) of parent respondents in the study. Additionally, there was an almost even percentage of male (48.5%) and female (51.5%) youth included in the study. The average age of youth in the sample was 13 (SD=2.7) and the majority of youth were Caucasian (67.7%). Just over half (53.3%) had been previously hospitalized and just over a quarter (26.3%) were rehospitalized within three months of discharge. Most of the children enrolled in the study were diagnosed with an internalizing disorder (62.9%). Most parents reported participating in about three inpatient activities during their child's hospital stay.

Table 7

*Child and Family Characteristics*

Variable	N (%)	M (SD)
Parent Age		45.4 (31.8)
Parent Gender		
Male	31 (18.6)	
Female	114 (68.3)	
Missing	22 (13.2)	
Child Age		13.5 (2.7)
Male	81 (48.5)	
Female	86 (51.5)	
Child Ethnicity		
African American/Black	12 (7.2)	
Hispanic/Latino	21 (12.6)	
Caucasian	113 (67.7)	
Asian/Pacific Islander	16 (9.6)	
Other	5 (3.0)	
Psychiatric Rehospitalization		
No	123 (73.7)	
Yes	44 (26.3)	
Previous Hospitalization		
No	89 (53.3)	
Yes	78 (46.7)	
Psychosocial Risk		1.9 (0.9)
Length of Stay		5.9 (3.4)
Diagnosis		
Both Internalizing and Externalizing	46 (27.5)	
Internalizing	105 (62.9)	
Externalizing	12 (7.2)	
Missing	4 (2.4)	
Family Involvement Index		3.2 (1.5)
Supportive		
True*	157 (94.0)	
Not True**	10 (6.0)	
Transparent		
True	107 (64.1)	
Not True	60 (35.9)	
Empower		
True	73 (43.7)	
Not True	94 (56.3)	
Unsupportive		
True	16 (9.6)	
Not True	151 (90.4)	
Responsive		
True	0 (0)	
Not True	167 (100)	

Note. N=167

\*Clinician helping behaviors were present; \*\*clinician helping behaviors were not present.

The majority of parents (94%) indicated that clinicians were supportive of them during the treatment process and just over half (56.3%) of the respondents revealed that an empowering exchange took place between them and the clinicians. Interestingly, none of the parents indicated that clinicians made referrals for external diagnostic procedures or provided treatment beyond what was needed. Because of the lack of variability on this variable, it was excluded from all subsequent analyses.

Among clinicians enrolled in the study, the majority (70.4%) was female and almost half (44.4%) of the clinician respondents were registered nurses. All but one clinician (96.3%) agreed that parents were to blame for emotional and behavioral problems in children. Interestingly, the majority of clinicians agreed that parents should be fully informed (92.6%) concerning their child's treatment that parents should be validated (85.2%) and that parents should be instructed about how they can help their child (81.5%) (See Table 8). Because of the low variability on the Blame and Inform factors, they were excluded from all further analyses.

Univariate tests presented in Table 9 revealed that previous hospitalization, psychosocial risk and length of stay were the only variables that significantly predicted psychiatric rehospitalization. For children who were previously hospitalized, the odds of psychiatric rehospitalization increased by 2.55 times. For every additional psychosocial risk factor, the odds of rehospitalization increased by 52% and with each additional day the child was hospitalized the odds of rehospitalization increased by 12%. It should be noted that Empower although only approaching significance at the univariate level was a significant predictor in multivariate tests. The implications of this relationship are discussed in chapter five.

Table 8

*Clinician Characteristics*

Variable	N (%)	M (SD)
Clinician Age		41.88 (11.5)
Clinician Gender		
Male	8 (29.6)	
Female	19 (70.4)	
Clinician Profession		
Psychiatrist	5 (18.5)	
Registered Nurse	12 (44.4)	
Marriage and Family Therapist	5 (18.5)	
Social Worker	1 (3.7)	
Psychologist	1 (3.7)	
Teacher	1 (3.7)	
Missing	2 (7.4)	
Provider Beliefs About Parents (PBAP)		
Blame		
Agree*	26 (96.3)	
Disagree**	1 (3.7)	
Inform		
Agree	25 (92.6)	
Disagree	2 (7.4)	
Validate		
Agree	23 (85.2)	
Disagree	4 (14.8)	
Instruct		
Agree	22 (81.5)	
Disagree	5 (18.5)	

Note. N=167.

\*Agree with belief about parents; \*\*disagree with belief about parents.

Child characteristics were reported by rehospitalization status in Table 10 and revealed that more children rehospitalized had been previously hospitalized (63.6) when compared with children who were not rehospitalized (40.7). Non-Caucasians represented 43.2% of those who were rehospitalized even though they only account for 32.3% of the entire sample. Further, the majority of rehospitalized and non-rehospitalized children had 1-2 psychosocial risk factors. Of rehospitalized children, 52.3% represented this group and of non-rehospitalized children, 73.1% has 1-2 psychosocial risk factors. Finally,

children who were rehospitalized had longer mean lengths of stay (7 days) when compared to children who were not rehospitalized (5.5 days).

Table 9

*Univariate Logistic Regression Predicting Psychiatric Rehospitalization*

	P	OR	95% CI
<b>Clinician Demographics</b>			
Age	-.721	0.99	[0.96, 1.02]
Gender (Male- ref)	-.349	0.71	[0.35, 1.43]
Clinician Profession (Non-RN-ref)	.970	1.01	[0.43, 2.39]
<b>Clinician Beliefs</b>			
Validate	.566	1.06	[0.86, 1.30]
Instruct	-.989	0.99	[0.64, 1.55]
<b>Child Demographics</b>			
Age	-.820	0.98	[0.87, 1.11]
Gender (Male-ref)	-.560	0.81	[0.40, 1.62]
Ethnicity (Caucasian-ref)	.075	1.91	[0.93, 3.90]
<b>Child Non-Clinical Variables</b>			
Previous Hospitalization ** (Not previously hospitalized-ref)	.010	2.55	[1.25, 5.20]
Psychosocial Risk Index*	.026	1.52	[1.05, 2.20]
<b>Child Clinical Variables</b>			
Length of Stay (LOS)*	.020	1.12	[1.01, 1.24]
Diagnosis (Dual Diagnosis and Externalizing -ref)	-.317	0.69	[0.34, 1.41]
<b>Family Involvement and Professional Helping Behaviors</b>			
Family Involvement	-.968	1.00	[0.70, 1.26]
Supportive	-.460	0.97	[0.89, 1.05]
Transparent	-.286	0.88	[0.69, 1.11]
Empower	.067	1.23	[0.98, 1.55]
Unsupportive	-.376	0.93	[0.79, 1.09]

*Note.* N=167. OR=odds ration; CI= confidence interval.

\* p <.05; \*\* p <.01.

Table 10

*Sample Characteristics of Rehospitalized and Non-Rehospitalized Patients*

Variable	Rehospitalized n =44 N (%)	Non-Rehospitalized n=123_ N (%)	Total N (167)
Age			
Children (5-13)	18 (40.9)	45 (36.6)	63 ( 37.7)
Adolescents (14-17)	26 (59.1)	78 (63.4)	104 ( 62.2)
Mean (SD)	13.5 (2.8)	13.6 (2.6)	13.59 (2.7)
Gender			
Male	23 (52.3)	58 (47.2)	81 (48.5)
Female	21 (47.7)	65 (52.8)	86 (51.4)
Ethnicity			
Caucasian	25 (56.8)	88 (71.5)	113 (67.6)
Non-Caucasian	19 (43.2)	35 (28.5)	54 (32.3)
Previous Hospitalization			
No	16 (36.4)	73 (59.3)	89 (53.2)
Yes	28 (63.6)	50 (40.7)	78 (46.7)
Psychosocial Risk Missing			
4 (2.3)			
0	2 (4.5)	6 (4.9)	8 (4.7)
1-2	23 (52.3)	90 (73.1)	113 (67.6)
3-4	18 (40.9)	24 (19.5)	42 (25.1)
Length of Stay			
Mean (SD)	7.0 (4.0)	5.5 (3.0)	5.9 (3.4)
Diagnosis Missing 4 (2.3)			
Both and Externalizing	18 (40.9)	40 (32.5)	58 (34.7)
Internalizing	25 (56.8)	80 ( 65.0)	105 (62.8)

Note. N=167.

### Multivariate Analyses

Multivariate logistic regression analyses were conducted to test research hypotheses. Variables were entered in blocks using the enter method across all models. The results of these analyses are presented below.

#### *Research Question One*

Does psychiatric rehospitalization of children and adolescents vary by clinician?

## **Hypothesis**

Psychiatric rehospitalization varies by clinician

The answering of this question presupposed a nested approach. As discussed in chapter three, we encountered multiple problems with this analytic approach, which was likely due to an insufficient final sample size ( $n=167$ ), the structure of the data which indicated that there was an inconsistent number of parent respondents nested under the various clinicians and finally, the results of the analysis of variance (ANOVA). Results of the ANOVA, the first step in the modeling process, indicated that the reliability of the model was low ( $\alpha .30$ ) suggesting that it was not prudent to proceed with further testing using this analytic method. As a result, this research question could not be answered.

### ***Research Question Two***

Does a relationship exist between clinician beliefs and psychiatric rehospitalization of children and adolescents?

## **Hypothesis**

Negative clinician beliefs will predict psychiatric rehospitalization

Logistic regression analysis was conducted to determine which clinician variables (Validate and Instruct) were predictors of psychiatric rehospitalization when controlling for salient covariates (clinician age, gender and profession). Wald statistics indicated that none of the clinician variables significantly predicted psychiatric rehospitalization. Regression results indicated the overall model was not statistically significant in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2

Log Likelihood=186.506; Cox and Snell R Square =.010, Nagelkerke R Square= .014;  $\chi^2$  (5) =1.595, p.902). The model correctly classified 73.6% of the cases. Regression coefficients are presented in Table 11.

Table 11

*Logistic Regression of Clinician Variables Predicting Psychiatric Rehospitalization*

Predictor	p	OR	95% CI
Clinician Age	-.474	0.98	[0.94,1.02]
Clinician Sex	-.279	0.59	[0.23, 1.51]
Clinician Profession	.713	1.21	[0.42, 3.47]
Validate	-.934	1.98	[0.74, 1.30]
Instruct	-.485	0.79	[0.41, 1.52]

Note. OR=odds ratio; CI=confidence interval.

***Research Question Three***

Does a relationship exist between family involvement in care and child and adolescent psychiatric rehospitalization?

**Hypothesis**

Higher family involvement in care will be associated with reduced likelihood of psychiatric rehospitalization.

Logistic regression analysis was conducted to determine if the family involvement index and parent perceptions of clinician helping behavior (Supportive, Transparent, Empower, Unsupportive) predict psychiatric rehospitalization when controlling for salient covariates (Child age, sex, ethnicity, previous hospitalization, psychosocial risk, length of stay and diagnosis). Wald Statistics indicated that previous hospitalization, psychosocial risk and Empower significantly predicted psychiatric rehospitalization.



Regression results indicated that the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2 Log Likelihood=156.336; Cox & Snell R Square = .160, Nagelkerke R Square = .234;  $\chi^2$  (12) =27.874,  $p < .006$ ). The model correctly classified 77.5% of the cases. Regression coefficients are presented in Table 12. Odds ratio indicated that for children who were previously hospitalized, the odds of psychiatric rehospitalization increased 2.98 times. In addition, for every unit increase in psychosocial risk, the odds of psychiatric rehospitalization increased by 59%. Finally, odds ratio indicated that for every unit increase in Empower, the odds of psychiatric rehospitalization increased by 42%.

Table 12

*Logistic Regression of Family and Child Predictors of Psychiatric Rehospitalization*

Predictor	p	OR	95% CI
Child Age	-.241	0.89	[0.74, 1.07]
Child gender	-.419	0.70	[0.30, 1.63]
Ethnicity	.194	1.77	[0.74, 4.18]
Previous Hospitalization	.011*	2.98	[1.28, 6.93]
Psychosocial Risk	.045*	1.59	[1.01, 2.51]
Length of Stay	.147	1.08	[0.97, 1.21]
Diagnosis	-.846	0.90	[0.33, 2.43]
Family Involvement	-.358	0.87	[0.65, 1.16]
Supportive	-.176	0.93	[0.84, 1.03]
Transparent	.941	0.98	[0.74, 1.32]
Empower	.024*	1.42	[1.04, 1.93]
Unsupportive	-.212	0.88	[0.73, 1.07]

Note. OR=odds ratio; CI=confidence interval.

\*  $p < .05$ .

***Research Question Four***

Do clinician beliefs moderate the relationship between family involvement and psychiatric rehospitalization?

## **Hypothesis**

Negative clinician beliefs moderate the relationship between family involvement and psychiatric rehospitalization.

Sequential/hierarchical logistic regression analyses were used to test for moderation. Given limits of sample size, moderation was tested in three blocks for each clinician belief variable (Validate and Instruct), Empower and covariates. Block one results included family involvement variables and covariates and are the same for same for both moderation tests. Therefore, block one results are presented once below in Table 13. Block two results included each clinician belief variable in addition to the variables in block one. Finally, block three results included the interaction term relevant to the clinician belief variable being tested with Empower in addition to all the variables in block two. Blocks two and three results are presented for each clinician belief variable and Empower.

Moderation is said to occur if the following conditions are fulfilled: 1) the interaction term significantly predicts psychiatric rehospitalization, 2) the relationship between Empower and psychiatric rehospitalization becomes substantially weaker or stronger or 3) if the direction of the correlation between Empower and psychiatric rehospitalization changes (Baron & Kenny, 1986).

It should be noted that all clinician belief variables and the significant family involvement variable, Empower, was mean centered prior to creating interaction terms used in the analyses (Jaccard, 2001). Because of the limited sample size, the moderation tests were also conducted using only the significant covariates and family involvement variables to check for consistency in the findings. The results of these analyses were

consistent with the results presented below suggesting that the analyses were not adversely affected by power limitations.

Logistic regression was conducted to determine if clinician beliefs (Validate and Instruct) moderate the relationship between family involvement variable Empower and psychiatric rehospitalization when controlling for salient covariates (Child age, sex, ethnicity, previous hospitalization, psychosocial risk [parent history of mental illness, child history of sexual abuse, physical abuse, and violence in the home, history of abandonment, head trauma or seizures and drug and alcohol abuse], length of stay and diagnosis).

### **Test One-Empower and Validate**

First a test of moderation was conducted to determine if Validate moderates the relationship between Empower and psychiatric rehospitalization. In block one of the test, only family involvement variables and child covariates were included in the model. Wald statistics demonstrated that previous hospitalization, psychosocial risk and Empower significantly predicted psychiatric rehospitalization. Regression results revealed that the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2 Log Likelihood=156.336; Cox & Snell R Squared= .160, Nagelkerke R Square=.234;  $\chi^2(12) = 27.874, p < .006$ ). The model correctly classified 77.5% of the cases. Regression coefficients are presented in Table 13. Odds ratio indicated that for children who were previously hospitalized, the odds of psychiatric rehospitalization increased 2.98 times. In addition, for every unit increase in psychosocial risk, the odds of psychiatric rehospitalization increased by 59%. Finally, for

every unit increase in Empower, the odds of psychiatric rehospitalization increased by 42%.

Table 13

*Logistic Regression Block One Test for Moderation*

Predictor	p	OR	95% CI
Child Age	-.241	0.89	[0.74, 1.07]
Child gender	-.419	0.70	[0.30, 1.63]
Ethnicity	.194	1.77	[0.74, 4.18]
Previous Hospitalization	.011*	2.98	[1.28, 6.93]
Psychosocial Risk	.045*	1.59	[1.01, 2.51]
Length of Stay	.147	1.08	[0.97, 1.21]
Diagnosis	-.846	0.90	[0.33, 2.43]
Family Involvement	-.358	0.87	[0.65, 1.16]
Supportive	-.176	0.93	[0.84, 1.03]
Transparent	.941	0.98	[0.74, 1.32]
Empower	.024*	1.42	[1.04, 1.93]
Unsupportive	-.212	0.88	[0.73, 1.07]

Note. OR=odds ratio; CI=confidence interval.

\*p <.05.

In block two, Validate was added to the variables in block one. Wald statistics for this block showed that previous hospitalization, psychosocial risk and Empower significantly predicted psychiatric rehospitalization. Regression results indicated the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2 Log Likelihood=156.224; Cox & Snell R Squared= .160, Nagelkerke R Square=.235;  $\chi^2(13) = 27.986, p.009$ ). The model correctly classified 77.5% of the cases. Regression coefficients are presented in Table 14. Odds ratio indicated that for children who were previously hospitalized, the odds of psychiatric rehospitalization increased 2.99 times. Additionally, odds ratio indicated that for every unit increase in psychosocial risk, the odds of psychiatric rehospitalization increased by

58% and finally for every unit increase in Empower, the odds of psychiatric rehospitalization increased by 41%.

Table 14

*Logistic Regression Block Two Test for the Moderating Effect of Validate on Empower*

Predictor	p	OR	95% CI
Child Age	-.249	0.89	[0.74, 1.07]
Child gender	-.412	0.70	[0.30, 1.63]
Ethnicity	.201	1.75	[0.74, 4.16]
Previous Hospitalization	.011*	2.99	[1.28, 6.97]
Psychosocial Risk	.050*	1.58	[0.99, 2.49]
Length of Stay	.139	1.08	[0.97, 1.21]
Diagnosis	-.843	0.90	[0.33, 2.43]
Family Involvement Index	-.355	0.87	[0.65, 1.16]
Supportive	-.205	0.93	[0.84, 1.03]
Transparent	-.921	0.98	[0.73, 1.31]
Empower	.028*	1.41	[1.03, 1.93]
Unsupportive	-.247	0.89	[0.74, 1.08]
Validate	.739	1.04	[0.82, 1.32]

Note. OR=odds ratio; CI=confidence interval.

\* p <.05; \*\* p .01.

In block three, the interaction term Empower x Validate was added to the previous model. Wald statistics for this block indicated that only previous hospitalization and Empower significantly predicted psychiatric rehospitalization. The interaction term Empower x Validate did not significantly predict psychiatric rehospitalization.

Regression results indicated the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2 Log Likelihood=155.642; Cox & Snell R Squared= .164, Nagelkerke R Square=.239;  $\chi^2(14) = 28.567, p.012$ ). The model correctly classified 76.9% of the cases. Regression coefficients are presented in Table 15. Odds ratio indicated that for children who were

previously hospitalized, the odds of psychiatric rehospitalization increased 3.10 times. Additionally, with every unit increase in Empower, the odds of psychiatric rehospitalization increased by 44%. The findings suggest that Validate did not moderate the relationship between Empower and psychiatric rehospitalization.

Table 15

*Logistic Regression Block Three Test for the Moderating Effect of Empower x Validate on Empower*

Predictor	p	OR	95% CI
Child Age	-.302	0.90	[0.75, 1.09]
Child gender	-.370	0.67	[0.29, 1.58]
Ethnicity	.188	1.79	[0.75, 4.27]
Previous Hospitalization	.009*	3.10	[1.32, 7.26]
Psychosocial Risk	.061	1.55	[0.97, 2.45]
Length of Stay	.147	1.08	[0.97, 1.21]
Diagnosis	-.730	0.83	[0.30, 2.29]
Family Involvement Index	-.316	0.86	[0.64, 1.15]
Supportive	-.171	0.92	[0.83, 1.03]
Transparent	-.969	0.99	[0.74, 1.33]
Empower	.020*	1.44	[1.05, 1.96]
Unsupportive	-.252	0.89	[0.74, 1.08]
Validate	.745	1.04	[0.81, 1.32]
Empower*Validate	.440	1.04	[0.93, 1.18]

Note. OR=odds ratio; CI=confidence interval.

\* p <.05; \*\* p <.01.

**Test Two-Empower and Instruct**

A final test of moderation was conducted to determine if Instruct moderated the relationship between Empower and psychiatric rehospitalization. Wald statistics for block two showed that previous hospitalization, psychosocial risk and Empower significantly predicted psychiatric rehospitalization. Regression results indicated that the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and

adolescents (-2 Log Likelihood=156.280; Cox & Snell R Squared= .160, Nagelkerke R Square=.234;  $\chi^2(13) = 27.930, p.009$ ). The model correctly classified 77.5% of the cases. Regression coefficients are presented in Table 16. Odds ratio suggested that for children who were previously hospitalized, the odds of psychiatric rehospitalization increased 3.01 times. Additionally, odds ratio revealed that for every unit increase in psychosocial risk, the odds of psychiatric rehospitalization increased by 59% and finally, for every unit increase in Empower, the odds of psychiatric rehospitalization increased by 43%.

Table 16

*Logistic Regression Block Two Test for the Moderating Effect of Instruct on Empower*

Predictor	p	OR	95% CI
Child Age	-.279	0.88	[0.70, 1.10]
Child gender	-.428	0.71	[0.30, 1.65]
Ethnicity	.212	1.74	[0.72, 4.15]
Previous Hospitalization	.011**	3.01	[1.29, 7.03]
Psychosocial Risk	.045*	1.59	[1.01, 2.51]
Length of Stay	.145	1.08	[0.97, 1.21]
Diagnosis	-.854	0.91	[0.33, 2.44]
Family Involvement Index	-.345	0.86	[0.64, 1.16]
Supportive	-.174	0.93	[0.83, 1.03]
Transparent	-.929	0.98	[0.73, 1.32]
Empower	.025*	1.43	[1.04, 1.95]
Unsupportive	-.213	0.88	[0.73, 1.07]
Instruct	-.813	0.91	[0.45, 1.85]

Note. OR=odds ratio; CI=confidence interval.

\*p < .05; \*\* p .01.

In block three, the interaction term Empower x Instruct was added to the previous model. Wald statistics for this block indicated that only previous hospitalization and Empower significantly predicted psychiatric rehospitalization. The interaction term Empower x Instruct did not significantly predict psychiatric rehospitalization. Regression

results indicated the overall model was reliable in distinguishing between rehospitalized and non-rehospitalized children and adolescents (-2 Log Likelihood=154.975; Cox & Snell R Squared= .167, Nagelkerke R Square=.244;  $\chi^2$  (14) =29.235, p.010). The model correctly classified 80% of the cases. Regression coefficients are presented in Table 17. Odds ratio showed that for children who were previously hospitalized, the odds of psychiatric rehospitalization increased 3.04 times. Additionally, with every unit increase in Empower, the odds of psychiatric rehospitalization increased by 49%. The findings suggest that Instruct did not moderate the relationship between Empower and psychiatric rehospitalization.

Table 17

*Logistic Regression Block Three Test for the Moderating Effect of Empower x Instruct Empower*

Predictor	p	OR	95% CI
Child Age	-.258	0.87	[0.69, 1.10]
Child gender	-.439	0.71	[0.30, 1.66]
Ethnicity	.198	1.77	[0.74, 4.27]
Previous Hospitalization	.011*	3.04	[1.29, 7.15]
Psychosocial Risk	.051	1.57	[0.99, 2.48]
Length of Stay	.160	1.08	[0.96, 1.21]
Diagnosis	-.676	0.80	[0.29, 2.21]
Family Involvement Index	-.281	0.84	[0.63, 1.14]
Supportive	-.124	0.92	[0.82, 1.02]
Transparent	-.947	0.99	[0.74, 1.32]
Empower	.016*	1.49	[1.08, 2.07]
Unsupportive	-.264	0.89	[0.74, 1.08]
Instruct	-.806	0.91	[0.45, 1.85]
Empower*Instruct	-.252	0.82	[0.60, 1.14]

Note. OR=odds ratio; CI=confidence interval.

\* p <.05; \*\* p .01.



## **Conclusion**

Based on the above findings, clinician beliefs about parents do not predict psychiatric rehospitalization. Further, of the family involvement variables only Empower significantly predicted psychiatric rehospitalization. Interestingly, children were more likely to be rehospitalized when parents reported high scores on Empower. In addition, previous hospitalization was the only child covariate that consistently predicted psychiatric rehospitalization.

The findings suggest that the odds of rehospitalization increases significantly for children who were previously hospitalized. Although psychosocial risk and length of stay were significant predictors of psychiatric rehospitalization in univariate tests, length of stay was not a significant predictor of rehospitalization in multivariate tests. Worthy of note, psychosocial risk reached significance across all multivariate tests except when interaction terms were added to the models. Finally, none of the clinician belief variables moderated the relationship between Empower and psychiatric rehospitalization. Specifically, there were no major differences in the strength of the relationship between Empower and psychiatric rehospitalization nor was there any change in the direction of the relationship. Previous hospitalization and Empower were consistent predictors of psychiatric rehospitalization across all models suggesting that they are significant variables to consider in regards to psychiatric rehospitalization among children and youth.

## **CHAPTER FIVE**

### **DISCUSSION AND CONCLUSION**

The study endeavored to examine factors associated with psychiatric rehospitalization among children and adolescents with severe emotional and behavioral disorders. The study findings substantiate previous relevant literature and provide important new insights into the relationships between clinician, family, individual child factors and psychiatric rehospitalization. The study findings also raise questions, in particular concerning the conceptualization of psychiatric rehospitalization as an outcome for children and adolescents in acute inpatient psychiatric care and offer considerations concerning its conceptualization.

#### **Research Questions**

Andersen and Newman's Behavioral Model of Health Care Utilization guided the selection and organization of variables into predisposing, enabling and need factors to answer proposed research questions.

#### ***Research Question Two***

Clinician beliefs were not shown to significantly predict psychiatric rehospitalization among children and adolescents. Neither clinician characteristics such as age, gender or profession nor clinician beliefs about validating parents expertise about their child (Validate) or instructing parents on how they can help their child (Instruct), significantly predicted psychiatric rehospitalization. This finding does not support the

study hypothesis that negative clinician beliefs about parents would predict psychiatric rehospitalization.

To our knowledge, this study is the first to examine clinician beliefs as a predictor of psychiatric rehospitalization among children and adolescents. However, the importance of examining clinician attitudes and perceptions as health system variables that may play an important role in readmission to psychiatric facilities has been suggested. Although the authors did not examine this relationship, they suggest in their discussion, that clinician attitudes and perceptions of patients may partly explain the inconsistency in patient variables across studies (Bernardo & Forchuck, 2001; Pfeiffer & Strzelecki 1990).

It is interesting to note that mental health outcomes have been linked to an organization's culture and climate (Glisson et al., 1998). Although clinicians are part of an organization, this study's findings suggest that on an individual basis, clinician attitudes toward families in treatment do not directly impact mental health outcomes. This finding does not negate the possibility that clinician beliefs may be indirectly related to psychiatric rehospitalization and may warrant further investigation.

Additionally, descriptive findings add to the limited knowledge on clinician beliefs about parents of children with emotional and behavioral disorders. Of the 27 clinicians participating in the study, all but one agreed that parents were to blame for emotional or behavioral problems observed in their children. Although almost all clinicians attributed blame to parents for problems observed in children, almost all clinicians agreed that parents should be fully informed concerning their child's treatment, that parents should be validated for their expertise about their own children and that

parents should be instructed about how to help their children. Clinician responses point to indications in the literature that clinicians continue to blame parents for emotional and behavioral problems observed in children (Heru & Berman, 2008; Pottick et al., 2001; Rubin, Cardenas, Warren, Pike, & Wambach, 1998). Although almost all clinicians blamed parents for child problems, consistent with prior work, the majority of clinicians expressed beliefs that support information sharing, validating and instructing parents in treatment (Jivanjee, 1999).

### ***Research Question Three***

In this study, family involvement in treatment was operationalized uniquely to include parent visitation and participation in inpatient activities, as well as parent perceptions of provider helping behaviors toward them during the treatment process. Interestingly, although previous studies have found parent visitation, participation in inpatient activities such as treatment planning and family sessions to be related to rehospitalization, in this study no such association was found. Surprisingly, parent perceptions of empowering behaviors on the part of mental health clinicians were the only significant predictor of psychiatric rehospitalization. The results suggest that the more empowered parents felt during their child's psychiatric treatment, the more likely their child was to be rehospitalized.

The hypothesized relationship between family involvement and psychiatric rehospitalization was not substantiated by the study results. In the context of family involvement as a predictor of psychiatric rehospitalization the findings differed from past literature. For example, Brinkmeyer et al. (2004) examined family engagement in

inpatient psychiatric treatment of children and adolescents, and noted that psychiatric rehospitalization was associated with poorer engagement in treatment. Another study found that one of the most impressive predictors of more positive outcomes for children and adolescents was parent participation in treatment planning during hospitalization (Parmelee et al., 1995).

It is possible that study results differ from past literature because of differences in the operationalization of family involvement. For example, Brinkmeyer et al. (2004) operationalized family involvement in treatment as the frequency with which parents visited the unit, participation in family treatment sessions, how open the family was to discussing family problems and parent hostility toward unit staff. Similarly, Parmelee et al. (1995) operationalized family involvement simply as participation in treatment planning during hospitalization.

In this study however, the variables used to measure family involvement in treatment represent more than merely participation in inpatient activities. They capture parents' perceptions of clinician attitudes and beliefs about them and clinician actions toward them during hospitalization. Specifically, the Empower subscale measures how informed parents are and how capable they feel to navigate the health system for needed services. This finding is noteworthy because it implies that perceptions of empowerment are more important to child mental health outcomes than actual participation or non-participation in inpatient activities. Therefore, in order to gauge and further understand the impact of the hospital experience on the child and family, parent reports of their experience may be more valuable than counts or indications of activities parents participated in.

Furthermore, this finding shows that children are at increased risk of rehospitalization when parents feel more empowered, because the information and support provided by professionals may enable families to be more capable of making informed decisions about needed care (Singh et al., 1997).

Family empowerment means that parents have knowledge skills and resources that can help them improve the lives of their children (Singh et al., 1995) by being more capable of negotiating the system to meet the needs of their children (Curtis & Singh, 1996). Therefore, in the context of seeking and using appropriate services for children as a result of parent empowerment, children in inpatient psychiatric settings may be at increased risk of rehospitalization. The finding is worthy of note as it points to an association between a desirable clinical phenomenon and an adverse mental health outcome. Thus, indicating the need for a broader conceptualization of psychiatric rehospitalization both as an adverse outcome in terms of cost and emotional burden on patients and families, and as a positive outcome of treatment when symptom severity and chronic illness is considered.

It should be noted that this finding does not invalidate the value of and need for community-based outpatient services to reduce rehospitalization risk. Instead, the results suggest that for children with severe emotional and behavioral disorders, rehospitalization may be considered as a match of need to service (Blader, 2004) or even as an appropriate short-term crisis intervention that can be utilized as needed among those with persistent emotional and behavioral disorders (Bryson, Naqvi, Callahan, & Fontenot, 1990; Dott, Walling, Bishop, Bucy, & Folkes, 1996; Yu-Chin & Arcuni, 1990).

It may also mean that families who feel supported by staff in a facility are more likely to return to this facility as a treatment resource and a source of support.

Given that much of the evidenced-based treatments for emotional and behavioral problems are available in outpatient settings (Silverman & Hinshaw, 2008), the increased likelihood of rehospitalization when parents feel empowered is somewhat concerning. It would seem that given the fact that inpatient psychiatric treatment has a weak evidence base, clinicians would make all efforts to encourage parents to seek outpatient services which have some evidence of effectiveness. Yet this study findings point to increased likelihood of rehospitalization when parents report empowering behaviors on the part of clinicians. It is possible that the increased likelihood of rehospitalization is an unintended outcome of clinician empowering behaviors. Therefore, a qualitative study may bring some understanding of this relationship. In addition, a re-conceptualization of psychiatric rehospitalization may also provide some insight into this relationship.

Finally, descriptive findings of parent's perceptions concerning clinician helping behavior during treatment revealed that almost all parents indicated that clinicians were Supportive of them during their child's treatment. Further, more than half of the parents thought that clinicians were Transparent regarding their child's information and treatment. Almost half of the parents indicated that clinician's behaviors were Empowering and less than one tenth thought that clinicians were Unsupportive during treatment. None of the parents indicated that clinicians were Responsive in regards to referring out for testing and diagnosis that could not be performed at the indexed facility. Given the vast array of resources available at this facility, it was very likely that such referrals were unnecessary and did not occur during the treatment period. Although many

of the parents agreed that clinicians expressed helping behaviors toward them, when compared to clinician beliefs about parents larger proportions of clinicians indicated positive beliefs toward parents. This finding implies that clinician beliefs about parents may not accurately represent their behaviors toward parents in treatment.

#### ***Research Question Four***

The tests for moderation indicated that none of the clinician belief variables moderated the relationship between Empower and psychiatric rehospitalization when controlling for child age, gender, ethnicity, previous hospitalization, psychosocial risk, length of stay, and diagnosis. Moderation was tested in two steps for each clinician belief variable. First, the belief variable was included in the model with Empower and then an interaction term created between the respective belief variable and Empower was included in a separate block. The results of these two steps were then compared to a separate base model containing only child covariates and family involvement variables.

According to the work of Baron and Kenny (1986), moderation did not occur because none of the interaction terms significantly predicted psychiatric rehospitalization. The relationship between empower and psychiatric rehospitalization did not become substantially weaker or stronger, nor did the direction of the correlation between Empower and rehospitalization change.

These findings point to parent perceptions of empowerment as a strong predictor of psychiatric rehospitalization and that this relationship is not significantly affected by clinician beliefs about parents. In addition, the finding lends support to previous research



suggesting that family empowerment influences mental health outcomes among youth (Dembo, Ramirez-Garnica, Rollie, & Schmeidler, 2000; Graves & Shelton, 2007).

This study question is unique and the findings reveal that clinician beliefs do not moderate the relationship between family involvement and psychiatric rehospitalization. The finding does however create a basis on which other studies may examine alternative relationships, such as a mediating relationship, among the above mentioned variables.

### **Supplemental Findings**

Supplemental study findings indicated that previous hospitalization was a consistent significant predictor of psychiatric rehospitalization in both univariate and multivariate analyses. As expected, children who were previously hospitalized were, in some cases more than three times as likely to be rehospitalized. This finding coincides with previous research suggesting that children who have been psychiatrically hospitalized are at increased risk for being rehospitalized (Chung et. al., 2008; Heflinger et al., 2002). Children who have been previously hospitalized may be at increased risk for rehospitalization for a variety of reasons. It is possible that previous hospitalization is an indication of the severity of psychiatric problems that may lead to several hospitalizations (Chung et al., 2008). Previous hospitalization may also predict future hospitalization because children may fail to receive effective post-discharge services following hospitalization (Foster, 1999).

This finding implies that it is very important for mental health clinicians in inpatient psychiatric settings to make appropriate recommendations for mental health services and for children to actually receive appropriate treatment beyond hospitalization.

Beyond making recommendations for post-discharge mental health treatment, services may be offered during hospitalization that will assess the family's ability to access needed services. Families may then be offered information for resources that can help them access the recommended services. It may not be enough to simply recommend treatment, to families without considering whether they are able to access these needed services.

Psychosocial risk significantly predicted psychiatric rehospitalization in univariate analyses and in most multivariate tests with the exception of models that included interaction terms. Because the interpretation of main effects are not the primary goals of models containing interaction terms (Baron & Kenny, 1986), the findings suggest that psychosocial risk is an important predictor of psychiatric rehospitalization when the interpretation of main effects are the purpose of the analysis. Results of the analyses showed that as child psychosocial risk increased the risk of psychiatric rehospitalization also increased by nearly 60%. As previously stated, the psychosocial risk factor index captures a child's reported history of abuse or violence in the home, abandonment, family mental illness, head trauma or seizures and drug or alcohol abuse. The results suggest that children identified as having higher psychosocial risk were more likely to be psychiatrically rehospitalized. This finding supports previous research findings indicating that the risk of psychiatric rehospitalization among children and adolescents increased by 36% with each additional psychosocial risk factor (James et al., 2010).

Length of stay was also significantly related to psychiatric rehospitalization in univariate tests but was not an important predictor of rehospitalization in multivariate

analyses. Univariate findings indicated that longer lengths of stay increased the risk of psychiatric rehospitalization by 12%. This finding is consistent with previous research (Fontanella, 2008; James et al., 2010; Pavkov, 1997). When longer lengths of stay predict rehospitalization, the relationship may be considered relative to problem severity (Fontanella, 2008).

An examination of the characteristics of rehospitalized and non-rehospitalized children and adolescents revealed some interesting differences and similarities between the groups. The average age of rehospitalized and non-rehospitalized children and adolescents was similar. There were also comparable proportions of males and females in each group. However, a substantially larger percentage of non-Caucasians were rehospitalized. In fact, the proportion of non-Caucasians rehospitalized was similar to that of Caucasians who were rehospitalized even though non-Caucasians only represented approximately one third of the sample. Included in this category were Black and African Americans, Hispanics, Asian Pacific Islanders and children of mixed race. Because minorities made up almost all of the participants in this group, this finding indicated that minorities are over represented among those who have been rehospitalized. In addition, although not significant in any of the analyses, there was a positive relationship between ethnicity and rehospitalization showing that non-Caucasians were more likely to be rehospitalized.

Furthermore, a substantially larger proportion of rehospitalized children had been previously hospitalized when compared to children who had not been rehospitalized. Also, the majority of children in both groups had 1 to 2 psychosocial risk factors however the proportion of children with 3 to 4 psychosocial risk factors was almost double for

children who had been rehospitalized. Children who were rehospitalized on average were hospitalized for two days longer than those children who were not rehospitalized. Finally, the majority of hospitalized and non-rehospitalized children were diagnosed with an internalizing disorder. Overall, rehospitalized children tended to be non-Caucasian, had been previously hospitalized, had several psychosocial risk factors and were hospitalized for two days longer than those who were not rehospitalized.

Finally, study results revealed that 26.3% (n=44) of the sample were rehospitalized within three months of the indexed hospitalization. This percentage is consistent with studies reporting psychiatric readmission among youth within the first ninety days following discharge. This period has been indicated as the highest rehospitalization risk period and studies have observed rehospitalization rates ranging from 21.4 % (Fontanella et al., 2008; Romansky et al., 2003) to 29.9 % (Blader, 2004). The risk of rehospitalization remains high especially within the first ninety days following discharge suggesting that interventions need to be targeted toward post-discharge service use within these first few months. Also, further work needs to be done to clarify the reasons for psychiatric rehospitalization either as a needed service based on severity or as a result of a failure to receive helpful post-discharge services.

### **Implications**

The study findings carry significant implications for theory, research, practice and social policy that are discussed in this section. The suggestions attempt to show the utility of the research findings and to add to the knowledge base in the area of mental health across the aforementioned domains.

### *Theory and Research*

The findings of this study suggest that on an individual basis, clinician factors specifically, their beliefs about parents of psychiatrically hospitalized children, do not directly affect mental health outcomes for youth. However, the findings do not rule out the possibility that clinician beliefs may be indirectly related to mental health outcomes for youth. In fact, as previously stated, it is quite possible that clinician beliefs may be indirectly related to youth mental health outcomes. Interestingly, parent perception of clinician empowering behavior was the only system level variable that significantly predicted psychiatric rehospitalization. This finding points to the importance of studying parent reports of professional helping behaviors in treatment as a health system variable predicting psychiatric rehospitalization. Thus, lending support to the Behavioral Model of Health Service Utilization (Andersen & Newman, 1973), suggesting that system factors in addition to individual level factors are important considerations when studying factors influencing the volume of health services utilized within a given time period.

It is interesting to note that the relationship between Empowerment and psychiatric rehospitalization found in this study raise questions about how psychiatric rehospitalization is conceptualized. Initially, the results seemed counterintuitive because they suggested that positive actions in treatment (Empower) resulted in negative outcomes for youth (increased likelihood of rehospitalization). However, when this finding is examined in the context of service utilization, as discussed earlier, it makes sense that increased parent empowerment may result in increased service use. This suggests that as an outcome of inpatient psychiatric treatment, psychiatric rehospitalization may need to be broadened or re-conceptualized.

Studies presenting various viewpoints on the concept of rehospitalization suggest that the meaning of rehospitalization is dependent on the treatment context within which it is being measured (Montgomery & Kirkpatrick, 2002) and that psychiatric rehospitalization may be an indication of success of a treatment program as opposed to a failure depending on the role of the hospital in the community (Erickson & Paige, 1973). Pfeiffer and Strzelecki (1990) also propose that psychiatric rehospitalization may be beneficial especially when certain aspects of treatment are present such as therapeutic alliance. Furthermore Blanz and Schmidt (2000) suggest that psychiatric hospitalization may have both positive and negative features that need to be considered. Finally, Montgomery and Kirkpatrick (2002) propose that the meaning of rehospitalization remains elusive because the system variables (e.g. admission policy) that provide the treatment context are not controlled for in studies.

It is the researcher's position that psychiatric rehospitalization cannot be conceptualized as simply either a negative or positive outcome of treatment. Instead, rehospitalization may need to be conceptualized as positive or negative depending on its effect on reimbursement companies/ institutions versus families and patients. It is understandable however, that given the weak evidence-base for inpatient psychiatric treatment (Silverman & Hinshaw, 2008) and the associated cost of hospitalization, there is significant hesitation to consider rehospitalization as a potentially positive treatment outcome. However, for future studies, researchers may consider revisiting the largely accepted conceptualization of psychiatric rehospitalization as a negative outcome of treatment.

Interestingly, a substantial proportion of families could not be reached at only three-months post discharge to provide information on mental health services their child received during the hospitalization of interest. This finding highlights the challenges associated with conducting mental health services research that involves a follow-up period. Studies interested in mental health outcomes over a period of time must find creative ways to enroll to track and re-engage with study participants to facilitate data gathering. Additionally, the reasons for such large drop out rates are largely unknown and therefore will require some effort to understand the reasons for drop out in an effort to improve response rates in future studies. It is possible that symptom severity, frequent relocation associated with the housing crisis, limited understanding concerning importance of study, or shame about persistent mental illness may all be important factors to consider for the group of participants that could not be reached at follow-up.

### *Practice*

The relationship between parent perceptions of empowering behaviors on the part of clinicians and psychiatric rehospitalization has important implications for practice. This finding implies that to improve the use of needed services among youth, clinicians may work toward providing parents with the information necessary to enable them to make decisions about accessing future needed services on behalf of their child. This practice implication assumes that in addition to the impact of clinician behaviors, a child who is psychiatrically rehospitalized was truly in need of such services. This assumption is plausible given the strict admission criteria needed to be met in order to be admitted for treatment.

Additionally, because children who have been previously hospitalized are at increased risk for rehospitalization, treatment practices can be geared toward recommending appropriate post-discharge services that reduce such risk. Such practices can include immediate enrollment in partial hospitalization or intensive outpatient programs where available and various other evidenced-based alternatives to inpatient care. In instances where such programs are unavailable or the patient is unable to access them because of insurance or logistical challenges, the discharging facility may offer transitional services to help connect patients with needed services and in some cases even providing post-discharge services. Such efforts may stave off rehospitalization for children who failed to receive needed aftercare services and for children with severe symptoms.

Practice strategies must be developed and implemented or fine-tuned to attend to the large proportion of youth who are rehospitalized within three months of discharge from inpatient psychiatric care. This revolving door phenomenon negatively impacts clinician confidence in the quality of services they provide and weakens consumer trust in the effective of the services received. Therefore, beyond referrals to post-discharge services, parents may be directed to advocacy services where they can receive help to access services that would otherwise be out of reach because of proximity or limitations set by insurance companies. Additionally, children with several psychosocial risk factors, who have been previously hospitalized, had longer lengths of stay and are minorities, should be engaged in a specialized discharge process that would position them most appropriately to receive needed services on an outpatient basis, therefore reducing the likelihood of rehospitalization.



Lastly, clinicians need to receive academic training and continuing education that provides accurate information about the etiology of mental illness in children because all but one clinician attributed blame to parents for mental illness in children. Further, clinicians need to be informed and offered organizational support in their responsibilities to parents of children in treatment. Study findings showed that most clinicians reported very positive beliefs about sharing information with parents, validating parents and instructing parents. However, parents reported less helping behaviors on the part of the same clinicians. These findings may point to a discrepancy between clinician beliefs and how their behaviors are perceived by parents during the treatment process. Based on Attribution Theory as proposed by Heider (1958), clinician behaviors may be an indication of what they truly believe about parents, as actions toward persons are said to be guided by judgments about situations and the role of those involved.

### ***Social Policy***

The findings of this study are of importance to designing and improving mental health policies guiding services for children with severe emotional and behavioral disorders and their families. Specifically, health system factors such as family involvement in treatment, provides important insight into the influence of clinician helping behaviors on mental health outcomes for youth. Such findings may lead to academic and continuing education training that may seek to influence clinician beliefs about parents and provide information concerning appropriate treatment of service consumers. Such attempts may work to improve mental health outcomes for those served by using clinicians as an instrument of intervention. This is an important consideration

given the impact of individual determinants that in large part are not amenable to intervention.

Further, individual determinants of mental health service use provide some prediction of mental health outcomes for youth. For example, service providers can anticipate that youth with several psychosocial risk factors may be at increased risk for poor mental health outcomes. Therefore, policy and treatment efforts can be geared toward providing additional support to families with children with specific individual characteristics that place them at increased risk for poor outcomes. Although, an individual characteristic such as the one mentioned, is not amenable to intervention, interventions can be developed or expanded to target those with characteristics that place them at increased risk for poor outcomes.

Additionally, organizational policies may be generated or improved on to provide in depth discharge planning services to patients and their families. Such services may seek to appropriately match child needs with aftercare services and to identify family vulnerabilities that may be ameliorated through advocacy services and agencies that offer services at prices based on family income. These policies will provide structure to the manner in which discharge planning is conducted with especially vulnerable patients and families which may result in improved outcomes for youth. Thus, families who experience difficulty accessing needed post-discharge services given insurance restrictions and limited availability of services will have an increased opportunity to seek and receive needed mental health services.

Furthermore, of particular importance to social policy is the conceptualization of psychiatric rehospitalization in the literature and its influence on mental health service

policy and practice. Specifically, much of the research and policy recommendations based on findings, identify ways in which psychiatric rehospitalization can be reduced. Most of the policies have focused on the financial burden of hospitalization to reimbursement companies and the emotional toll of rehospitalization on patients and their families. However, if in addition to conceptualization as a negative outcome of treatment, psychiatric rehospitalization was conceptualized as utilization of needed health services, policies guiding such services may need to be modified. For instance, based on symptom severity and etiology of illness, policies may guide how treatment recommendations are made. Children identified as having chronic illness versus situational challenges may be placed on different recovery tracks with suitable anticipated mental health outcomes. Given the growing number of alternatives to inpatient care, recommendations can also be made for parents to seek suitable evidenced-based outpatient treatment.

Finally, based on policy recommendations of the 2002 Children and Families subcommittee of the President's New Freedom Commission on Mental Health, there are several service system changes that can be made to involve families in treatment for children. The subcommittee recommended that policy changes must be made to involve families in treatment. Specifically, families need to be involved in designing, supporting and evaluating of services across various services settings in regards to the care of their children. Second, it was recommended that families should be provided with information along with several family support services such as education and training. It was also proposed that the capacity of family organizations should be enhanced to provide additional support, information and advocacy services to families of children with emotional and behavioral disorders (Huang et al., 2005).

## **Limitations and Strengths**

As with every study, several limitations should be noted. The study made use of convenience and purposive sampling techniques to enroll study participants at one facility. This may preclude drawing general inferences in the larger child and adolescent population and the findings of this study may not be generalizable beyond the geographic region in which the study was conducted.

Second, in an effort to enroll a representative group of parent participants, unit staff was expected to invite all parents to enroll in the study during the discharge process. This strategy presented many challenges. All parents were not consistently invited to participate in the study. Parent invitations to participate in the study differed by discharge personnel. This challenge further limited the representativeness of the study sample.

There were some challenges with enrolling clinicians. Although clinicians were introduced to the study at staff meetings, many did not respond to invitations to participate in the study. Clinicians were more willing to participate once supervisory staff introduced the study to them. Even then some clinicians completed the survey and left out important identifying information while others left the entire survey blank. The reluctance of the staff to participate in the study suggested that clinicians may not be comfortable with questions that were asked about their beliefs about parents. In particular it should be noted that parents were being enrolled in the study before clinicians. This raised clinician suspicions about what parents were reporting. It appeared that clinicians at this facility were not accustomed to being evaluated. Once questions concerning the parent research packets were raised by clinicians, the researcher made the decision to enroll clinicians into the study during the same time as parent. It is believed that the order

in which enrollment took place contributed to clinician resistance to participate in the study.

A sizeable portion of parents could not be reached at follow-up despite the fact the follow-up period was only 90 days. This challenge highlights some of the challenges in conducting mental health services research and raises questions about why parents may not be reachable during this short follow-up period. The state of California has suffered tremendously during the housing crisis and so it is possible that families are moving frequently. Additionally, parents may not be willing to discuss their child's mental health information beyond the clinical setting. These considerations may provide some answers concerning the large drop out rate and should be further examined to determine if failure to reach parents at follow-up has anything to do with children health outcomes. This information may provide important insight on how mental health burden and stigma affects help seeking behavior.

In addition, failure to reach those parents at follow-up posed some study limitations. Although missing data at follow-up was supplemented with medical record data to perform planned analyses, it should be noted that medical record data was limited to services the child might receive at the indexed facility only. The medical record could not be used to obtain information about services children may have received at other facilities.

All measurement instruments used although validated, were modified for use in the current study. These modifications were necessary based on the treatment setting and the unique interests of the study. However, subscales of instruments were kept intact to

maintain their reliability and individual items used to construct factors were tested for reliability.

Further, ideally a multilevel modeling approach should have been used to answer the research questions. This approach would allow for linking clinicians to children and their families, and would allow more in depth analysis of the study variables. The small sample size made this endeavor difficult but future research can make use of such methods to answer questions about the impact of clinicians and child and family variables on mental health outcomes for youth.

Additionally, post discharge service has been shown to predict psychiatric rehospitalization in some studies but was not controlled for in this study because of the pattern of missing data on that variable. Future work should control for post-discharge service use when examining the relationship between family involvement and psychiatric rehospitalization. Finally, the study made use of a small sample size which limits the generalizability of the findings.

Despite the limitations, this study has significant strengths that should be noted. The study made use of clinician level variables as predictors of psychiatric rehospitalization. To our knowledge this study represents the only one examining clinician variables in addition to child and family variables as predictors of psychiatric rehospitalization among children and adolescents. Additionally, the study made use of multiple sources of data that proved to be very useful in the presence of missing data at follow-up. Specifically medical record data was used to supplement missing follow-up data on previous hospitalization, use of mental health services since discharge and rehospitalization status. The study also made use of Spanish and English research

documents and instruments to improve the representativeness of the sample by including Spanish speaking participants. Finally, the study amended research protocols to facilitate data collection at follow-up by creating a self-report version of the CASA and offering a monetary incentive to improve the response rate.

### **Future Directions**

Further research should compare clinician beliefs with parent reports of their helping behavior in treatment. This would provide a more direct means of examining this relationship within the context of attribution theory. Further, future research should include post discharge service use as a covariate because of its recognized importance to psychiatric rehospitalization. Issues of insurance coverage and family socioeconomic status are all covariates that should be included in an examination of predictors of rehospitalization.

Future work on this topic may also control for previous hospitalization methodologically or increase sample sizes to perform tests to compare the importance of the study variables across previously hospitalized versus non hospitalized children. This may provide some insights into how these groups are different thereby allowing for interventions to be tailored toward children with different characteristics.

A larger sample size may allow for other statistical techniques such as multilevel modeling to be used to examine study variables. This type of analytic approach holds great promise because it allows the researcher to link clinicians to parents and it takes into account the nested relationship between system, family and child level variables. Finally, it may be important to study some of the research questions qualitatively. Such

an endeavor holds great promise for deepening the context of study findings as well as to provide direction for future research aimed at understanding the impact of system and individual characteristics on mental health outcomes.

### **Conclusion**

This study adds to the body of literature regarding predictors of psychiatric rehospitalization among children and adolescents. Although studies have examined the impact of system, family and child factors of psychiatric rehospitalization, to our knowledge this is the first study to examine clinician beliefs as a predictor of rehospitalization and one of few studies examining family involvement in care as a predictor of psychiatric rehospitalization. The findings of this study both converge with current literature and joins in challenging the dominant literature on the conceptualization of psychiatric rehospitalization as an adverse outcome of treatment. More importantly, this study's findings provide much direction for interventions aimed at improving mental health outcomes for youth. In addition, study findings may inform policies aimed at supporting family involvement in treatment for children and adolescents.



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