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## **The Effect of Follow-up Contact in Reoccurrence of Psychiatric Readmission**

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This study examined if clinical contact with clients within one week of discharge from an inpatient psychiatric facility had an influence on their readmission. One of the factors explored in this study was whether the impact of clinical contact could reduce readmission rates after discharge used to develop intervention strategies to reduce readmission. The study found that those individuals who had a case management appointment set within the first seven days of discharge from an inpatient psychiatric facility was approximately eight times more likely than non-clinical referrals, 32 % vs. 4 %, to be *not* readmitted to an inpatient psychiatric facility. When this was examined even more closely, it was determined that case management appointments attended within the first day following discharge from an inpatient psychiatric facility was significantly associated with attendance following discharge. The number of individuals who attended case management appointments dropped approximately 50% within 24 hours of discharge, as compared with the number of individuals who attended appointments following two days after discharge (18 % to 8 %). This trend continued as time progressed for the first two to seven days following discharge from an inpatient psychiatric facility, where the attendance of a clinical appointment dropped to 4% within seven days following discharge. These findings have implications on what type of clinical contact should be pursued following discharge from an inpatient facility, and how soon that appointment should be accomplished in order to decrease readmissions.

**KEYWORDS:** clinical contact, readmission, reoccurrence, psychiatric facility

### **Discharge and Readmission Context**

The number of discharges from inpatient psychiatric facilities of individuals with psychiatric diagnoses was over two million in 2010 (U.S. Census, 2010). A review of all Medicaid hospital admissions between 2003 and 2005, found half of those patients who were readmitted to an inpatient medical unit never attended any scheduled outpatient physician appointment within 30 days of discharge. With just one visit with a health professional within 30 days of discharge after discharge, patients saw their readmission rates to an inpatient psychiatric facility drop from 49 % to 17 %. (Gilmer & Hamblin, 2010). Of the top ten admission diagnoses, schizophrenia and substance use disorders represented 11.9 % of these admissions. At approximately \$1,465 per day for inpatient psychiatric admissions, the cost of inpatient psychiatric readmissions is high, both in financial and personal costs (Gilmer & Hamblin, 2010).

In order to impact the readmission rates for individuals admitted to a psychiatric facility within a relatively short period of time, intervention strategies may be used to decrease the rate of readmissions (Adair et al., 2003). These strategies need to be reviewed

to show if there is an empirical basis to pursue specific interventions. The time between discharge and when a follow up appointment occurs is a quality benchmark or standard of care, which is established at seven days (Hermann et al., 2006).

The first 30 days after discharge from an inpatient facility presents the greatest risk for readmission (Durbin, Lin, Layne, & Teed, 2007). Durbin et al., (2007) reviewed research on readmission to a psychiatric inpatient facility within 30 days of discharge. Of 13 studies that met criteria for inclusion, a general finding was that the highest risk for readmission was within the first 30 days following discharge from an inpatient psychiatric facility. The authors of this analysis suggested further studies were needed on discharge practices and how community interventions during the 30 days following discharge impacted readmission to an inpatient psychiatric facility.

### **General Statement**

This study examined if an association existed between clinical contacts within a seven-day period of time following discharge from a psychiatric facility and the readmission to a psychiatric facility within 30 days. Effective intervention strategies based on empirical findings have been needed to show if clinical contact within seven days after discharge from an inpatient psychiatric facility should be the standard of care (Hermann et al., 2006; Durbin et al., 2007). The mental health industry creates policy and procedures based on antidotal and unreliable information without an empirically established standard of care. Policy and protocols for client care need to be based on well-established empirically proven data, as with any degree of medical intervention. This study is one step in the development and establishment of data that may be used to create empirically based policy and protocols.

### **Statement of the Problem**

Researchers have indicated that follow-up care after discharge from a psychiatric facility can decrease readmission rates (Steffen, Kösters, Becker, & Puschner, 2009, Vigod et al., 2013; Walraven, Oake, Jennings, & Forster, 2010). A few of these studies were within the seven-day standard of care for follow-up appointments, as established by the American Psychiatric Association (Allen, Foster, Zealberg, & Currier, 2002). Established standard of care of providing clinical follow-up care within seven days of discharge accounts for less than half of the discharges from inpatient psychiatric facilities (Hamilton et al., 2015). There is a need to develop specific and defined empirically based standards of care that constitutes when follow-up care should be completed after discharge from the inpatient setting. Without these established standards of care, the inpatient mental health industry is free to establish whatever standards they choose to implement. Hamilton et al. (2015) established that the standard is only followed half the time. This may indicate there is a need for more empirical findings to define these effective standards in order to decrease readmission rates after discharge from inpatient psychiatric facilities. Empirical research is needed in order to show how follow-up care by a mental health professional after discharge within seven days after discharge is an effective intervention.

## Theoretical and Conceptual Framework

Providing empirical evidence examining if clinical contact within seven days of discharge from an inpatient psychiatric facility decreases readmission to an inpatient psychiatric facility within 30 days of the original admission may help to decrease client decompensation rates and costs to the system in providing additional hospitalizations. The themes and concepts envisioned by continuity-of-care models, demonstrate a *fit of services* where service provision meets the needs of clients and may impact them positively in their functioning and long-term ability to remain stable.

This study provides an overview of the factors that may impact readmission to a psychiatric inpatient facility within 30 days of discharge. These factors have been researched, to some extent in the available literature. At this time, some of these factors have been identified. These factors include type of contact, if clinical contact was made with the client, and if discharge planning was present within 30 days after discharge from an inpatient facility (Barker, Robinson, & Brautigan, 1999; Fontanella, Bridge, & Campo, 2009; Ilgen, Unger Hu, Moos, & McKellar 2008; Maples et al., 2012; Mark et al., 2013; Pfeiffer et al., 2016; Silva, Bassani, Palazzo, 2009; Vijayaraghavan, Messer, Xu, Sarkin, & Gilmer, 2015).

This study analyzed if clinical contact within seven days of discharge from an inpatient psychiatric facility was associated with a change in readmission rates to an inpatient psychiatric facility within 30 days of discharge. If those factors associated with readmission to an inpatient psychiatric facility within 30 days of discharge are also associated with the availability and type of clinical contact within seven days of discharge, then new and innovative strategies may be developed. The demographic factor of age was also analyzed to determine if an association existed between age and readmission to an inpatient psychiatric facility within 30 days of discharge.

## Purpose of the Study

A large amount of research has been devoted to continuity of care; however, little research has been completed to identify specific characteristics and needs related to intervention strategies to reduce readmission after discharge from an inpatient psychiatric facility (Brody, 2016). To develop these intervention strategies and what constitutes continuity of care, these standards need to be refined (Adair et al., 2003). The first 30 days following discharge from an inpatient psychiatric facility has been an area of focus by the behavioral health system (Hamilton et al., 2015). Readmission within 30 days of discharge may indicate which steps should be pursued to reduce these types of readmissions and specific intervention strategies.

The time between discharge from an inpatient psychiatric facility and when a follow-up appointment occurs has been reviewed, and the quality benchmark or standard of care has been established as seven days (Hermann et al., 2006; Craig et al., 1985). The American Psychiatric Association Standards of Care recommends a period of no longer than one week for follow-up care to occur after discharge from a psychiatric urgent care facility (Allen et al., 2002). Even though this is an established standard of care, less than half of the discharges from inpatient psychiatric facilities meet this standard (Hamilton et al., 2015).

This study developed further empirical basis to examine if follow-up care within the seven-day standard of care after discharge is needed to reduce readmissions. The inpatient psychiatric community needs a more established research knowledge base to determine what standards of care indicate both good clinical care and effective strategies in reducing cost. Without this type of research, the continued disregard for the established standard of care of follow up within seven days of discharge may continue.

### **Overview of Research Design**

The data for this study was obtained from archival information, and participants in the study included all adult individuals who met criteria for inclusion in the study. Participants were assessed at a mental health crisis facility or seen in the community between 2016 and 2017. Inclusion in the study was determined by the occurrence of an assessment of an adult with Medicaid in the catchment area of a mental health center crisis unit during the timeline discussed. The data was collected from the records of assessments performed on Medicaid clients by a mental health center crisis unit that performs walk-in and mobile assessments in the community. The data for these assessments and individuals who are placed in an inpatient psychiatric facility were tracked by the mental health center director of quality and compliance. The date of discharge and any follow-up clinical contact, which occurred within the mental health center after discharge or in the community, was also collected. The director of quality and compliance collected data on when clinical contact occurred, the type of clinical contact, and the individual's age. This data was then transferred to a file, which excluded any patient identifiable information before it was released to the author for data analysis. This ensured any data collected in the study protected client confidentiality and anonymity.

This study is a quantitative correlational research design to find associations among a number of factors related to readmission to a psychiatric inpatient facility within 30 days and service provided within seven days of discharge. Since most of the factors in this study were ordinal and nominal data sets, the use of non-parametric statistical analysis was used. The use of non-parametric statistical analysis such as Chi Square, Kaplan-Meier estimator, Cox regression, and parametric statistical analysis such as the Pearson's coefficient were utilized in this study to analyze the data. The Kaplan-Meier has been used as a type of analysis of survival rates of individuals in medical studies. This type of analysis is used to determine if patient's readmissions are associated with types of services provided within a specific number of days after discharge (Cox & Oakes, 1984, Kaplan & Meier, 1958; Lancaster & Seneta, 2005; Nagelkerke, 1991).

### **Methodology**

The design used in the study is a quantitative correlational research method, which analyzed the data collected to determine if significant associations existed between the variables identified in the study (Neuman, 2006). Much of the data in the study was nominal or ordinal in nature, so non-parametric data analysis tools were used to analyze the data. The use of non-parametric data analysis methods such as Chi Square, Kaplan-Meier estimator, Cox regression, and parametric data analysis methods such as the Pearson's coefficient, were used to analyze the data.

The Kaplan-Meier and the Cox regression are both used in the analysis of survival rates of individuals in medical studies. This type of analysis may be used to determine if patient's readmission rates are associated with types of services provided within a specific number of days after discharge. By analyzing the number of days after a clinical contact occurs, until an individual is either readmitted or not admitted at all to an inpatient psychiatric facility, the researcher in this study examined the ability of the individual to *survive* until the specified time (in this case of 30 days post discharge from an inpatient psychiatric facility) elapsed. This examination of an individual's ability to survive was observed in the context of whether he or she received clinical contact within the seven days after discharge from an inpatient psychiatric facility, and whether the presence of this contact was associated with greater survivability to the end of the episode (Cox & Oakes, 1984; Kaplan & Meier, 1958; Lancaster & Seneta, 2005; Nagelkerke, 1991).

### **Participants**

The data were collected from de-identified archival data. Participants included all adult individuals ( $N = 669$ ) who met criteria for inclusion in the study where individuals were placed in an inpatient psychiatric facility and who were assessed in 2016 and 2017. The data were provided by a midwest mental health center's director of quality and compliance and tracked for these assessments. The data included date of discharge, any follow up clinical contact that occurred within the mental health center after discharge or in the community. The director of quality and compliance also collected: when the clinical contact occurred, the type of clinical contact, and the individual's age. The data, which excluded any patient-identifiable information, were then transferred to a file before being released to the author for data analysis.

### **Sample**

This sample was collected from archival information from psychiatric assessments conducted on adults who presented either in a crisis walk-in center associated with a midwest mental health center or in a community setting, such as in emergency rooms, detention centers, or other various community settings. These individuals, ( $N = 669$ ), were either voluntarily requesting assessment or were involuntarily held for mental health assessment under state statutes. The assessment resulted in either release from care and recommended follow up for treatment or recommendation for placement in a secure setting for further assessment. Assessment information was placed in the medical record of the individual at the mental health center at the time of the assessment. The information was retrieved from archival data from these records and was deidentified before it was released to this author for analysis. All adult individuals who were assessed during the time frame of January 2016 and October 2017 were included in this study and were insured through the state Medicaid system. Medicaid was received through the county's mental health center, which had been assigned the responsibility for providing mental health services.

A power analysis was conducted using G\*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007). Assuming a medium effect size ( $f^2 = 15$ ), power of .95, and alpha set at .05, a suggested sample size of 44 for multiple regression analysis was used for this study. This sample size was substantially larger than the suggested sample size.

### **Ethical Considerations**

The main ethical considerations for this study would be anonymity. All identifying information that could have been used to track the name, client number, and address of the participants was removed before it was submitted for use in this study.

### **Data Analysis**

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) to compute frequencies for all variables. Where statistical analysis was needed, the data were analyzed using Chi Square, Kaplan-Meier estimator, Cox regression, and the Pearson's coefficient.

The Chi Square test was used to analyze if a relationship existed between whether or not clinical contact occurred within a seven-day period of discharge from an inpatient psychiatric facility, and if the individual was readmitted to an inpatient psychiatric facility within 30 days after the discharge or not (R1). The Chi Square test was applied to the comparison of cross tab analysis of whether or not the individual was readmitted to an inpatient psychiatric facility within 30 days and the type of clinical contact that occurred: case management, intake appointment, individual psychotherapy, medication management, group therapy contact, and nurse contact (R2).

The Kaplan-Meier estimator and Cox regression analysis were used to determine if an association existed between the frequency of readmission rates within 30 days of discharge from an inpatient psychiatric facility and if clinical contact within seven days of discharge from an inpatient psychiatric facility occurred (R3). These tests may be used to estimate the interval between when an event occurred and when it ended, if a status existed during the interval and if it significantly impacted if an individual reached the end of the event or not. In this context, the readmission of the individual to an inpatient psychiatric unit was the event that occurred between the date of the clinical contact within seven days of discharge and the date they were readmitted to an inpatient psychiatric facility. The number of days between the two events (date of clinical contact and date of readmission) was placed into groups. The curve represented when a clinical contact occurred in relation to readmission to an inpatient psychiatric facility hospital. The Kaplan-Meier estimator determined if the occurrence of an event (clinical contact within seven days of discharge) was associated with the ability of an individual to survive to the end of the 30-day post discharge date without being readmitted (Rich et al., 2010) (R3).

The demographic of age and readmission to an inpatient psychiatric facility were compared using cross tabs of frequencies to determine if the demographic of an individual's age was associated with readmission within 30 days of discharge or not. The Pearson's coefficient was used to analyze if the demographic variable was associated with readmission or not (Nagelkerke, 1991) (R4). Age was broken into interval categories of 18 to 39, 40 to 65, and 66 and older. These categories approximately correspond to Erickson's developmental model (Erickson, 1968). These categories were used to analyze if these specific stages of life and the concurrent issues related to these stages were associated with readmission to an inpatient psychiatric facility within 30 days of discharge.

## Results

This study used a quantitative correlational research method that analyzed the data collected to determine if significant associations existed between the variables identified in the study (Neuman, 2006). Much of the data in the study were nominal or ordinal in nature, so non-parametric data analysis tools were used to analyze the data. The use of non-parametric data analysis methods such as Chi Square, Kaplan-Meier estimator, and parametric data analysis methods such as the Pearson's coefficient were used to analyze the data.

The sample consisted of 669 individuals who ranged from ages 18 to 64 years old. The mean age of individuals who were admitted to an inpatient psychiatric facility in the sample was 34 years old. The study divided individuals into interval categories for age, which consisted of 69.2 %, 18 to 39 ( $N = 463$ ), and 30.8 %, 40 to 65 ( $N = 206$ ). The data set was not able to produce any data on the gender and race of participants. The archival data did not include this information, and these variables were not included in this study.

The mean number of days between discharge from an inpatient psychiatric facility and readmission to a psychiatric facility was 13.05 days. The mean length of stay in an inpatient psychiatric facility was 6.35 days. The number of participants from the sample who were readmitted after an initial admission to a psychiatric facility was 14.2 % ( $N = 94$ ).

The variables for number of days between discharge from an inpatient psychiatric facility and readmission to a psychiatric facility, length of stay, and age were screened to determine if violations of multilinear regression existed (e.g., multivariate normality, skewness, kurtosis), and the data were found to be within acceptable parameters. The only variable that showed significant variance was length of stay, which indicated that the variable was skewed at a level of 2.041 and showed a degree of kurtosis of 4.272. The length of stay was skewed due to higher length of stay for participants who were admitted for less than 5 days over the 30-day span of participants who were readmitted within a month of being discharged from an inpatient psychiatric facility. When the data for skewness and kurtosis were examined for the period of length of stay of less than eight days, skewness was within limits (.396) and kurtosis was -.787.

This study conducted Chi Square tests for independence on the first two hypotheses, (H1 and H2) and the fourth research question (H4). These research questions analyzed variables of whether or not clinical contact occurred within seven days of discharge, the type of clinical contact within seven days of discharge, and if the demographics of age interval, were significantly associated with whether or not individuals were rehospitalized after their initial admission to an inpatient psychiatric facility within 30 days of discharge. The Chi Square statistical test for significance of goodness of fit was used to analyze the research questions H1, H2, and H4.

The third research question, H3, used a regression analysis using the Kaplan-Meier estimator. The analysis examined the variables of whether or not clinical contact occurred within seven days of discharge and the number of days between the occurrence of a readmission from an inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility. The Kaplan-Meier estimator used a linear slope analysis to determine if the survival curve for individuals who received clinical contact within seven days of discharge and who were readmitted within 30 days of discharge from an inpatient facility differed significantly from the survival curve of individuals who received no clinical contact within 30 days of discharge and who were readmitted within 30 days of discharge from an inpatient



facility. The Log Rank Mantel Cox analysis was used to compare if the survival curve from both groups—those who received clinical contact within seven days of discharge and those who did not receive clinical contact within seven days of discharge— were significantly associated.

### **Research Question H1**

The Research Question H1 examined the relationship between whether or not clinical contact occurred within seven days of discharge from an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient facility. The covariates of if clinical contact occurred within seven days of discharge from an inpatient facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient facility were examined using a Chi Square crosstab analysis to determine if a significant association existed between the two covariates. The participants who had no follow-up appointment within seven days of discharge was 43.9 % of those who were not readmitted to an inpatient psychiatric facility within 30 days of discharge the total participants ( $N = 294$ ). The participants who did receive a follow-up appointment within seven days of discharge was 42.0 % of the total participants ( $N = 281$ ) who were not readmitted within 30 days of discharge from an inpatient psychiatric facility.

The data revealed no significant association between whether or not a participant received clinical contact within seven days of discharge from an inpatient psychiatric facility and whether or not they were readmitted to an inpatient psychiatric facility with 30 days of discharge,  $p = .371$ . The results indicated that the Research Question H1 null hypothesis was not rejected, and there was no support found for if clinical contact occurred or did not occur within seven days of discharge from an inpatient psychiatric facility, and if readmission to an inpatient psychiatric facility occurred or did not occur within 30 days of discharge from an inpatient psychiatric facility.

### **Research Question H2**

The Research Question H2 examined the association between the type of clinical contact occurring within seven days of discharge from an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient psychiatric facility. The covariates of the type of clinical contact within seven days of discharge from an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient psychiatric facility were examined using a Chi Square crosstab analysis to determine if an association existed between the two covariates. The type of clinical contact appointment that was set, if the participant attended the appointment, and if those participants who were readmitted or not readmitted into an inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility revealed the following findings.

Of the participants in the total sample who had a case-management appointment set, who attended the appointment, and who were not readmitted into a inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility was 36.2 % ( $N = 214$ ). Participants who had an appointment set, attended an intake appointment, and were not readmitted was 19 % ( $N = 127$ ). The percentage of participants who had a medication

evaluation was 17.3 % ( $N = 116$ ); the percentage of participants who had another referral, including such interventions that were non-clinical in nature, such as housing, residential referral, etc.) was 5.7 % ( $N = 38$ ). The percentage of patients in psychotherapy was 17.6 % ( $N = 116$ ). The percentage of participants who were transferred to a secure setting (which represented any participant who was discharged from an inpatient psychiatric setting to another inpatient psychiatric or medical setting) was 4.2 % ( $N = 28$ , see Table 1).

The data revealed a significant relationship between the type of clinical contact set and if the participant was or was not readmitted to an inpatient psychiatric facility within 30 days of discharge,  $p = .018$ . The data revealed that the category which showed the highest percentage of participants who were not readmitted to an inpatient psychiatric facility within 30 days of discharge was those participants who received and attended a Case Management appointment at 32.6 %, ( $N=218$ ). The next highest percentage of those who were not readmitted was participants who were provided with an Intake Appointment and attended the appointment after discharge from an inpatient facility, 17.0 %, ( $N = 114$ ), Medication Evaluation at 17.0 %, ( $N=100$ ), Psychotherapy at 17.0 %, ( $N=100$ ), and Other Referral at 4.2 %, ( $N= 28$ ). The most effective intervention in preventing readmission was Case Management appointments which were set and attended was close to eight times as effective as non-clinical interventions, such as Other Referral. It was twice as effective as being provided with an Intake, Medication, and Psychotherapy appointment. It is also noteworthy that of those participants who were provided with any face to face clinical contact intervention after discharge from an inpatient psychiatric facility, 83.7 %, ( $N=560$ ), were not readmitted to an inpatient psychiatric facility within 30 days of discharge, (See Table 1).

This higher percentage was also demonstrated in the results of individuals who were admitted to an inpatient psychiatric facility as related to type of clinical contact was Case Management which resulted in 3.6 % ( $N=24$ ). The next highest percentage of those who were admitted was participants provided with an Intake Appointment after discharge from an inpatient facility, 1.8 %, ( $N = 13$ ), Medication Evaluation at 2.4 % ( $N=16$ ), Psychotherapy at 2.7 %, ( $N=18$ ), and Other Referral at 1.5 %,  $N = 10$ , (see Table 1).

Table 1

*Type of Follow-up Appointment: Was Client Admitted to a Secure Setting within 30 Days*

	Was client admitted to a secure setting within thirty days after discharge?	
	No	Yes
Case Management	Count	218
	% of Total	32.6
Intake	Count	114
	% of Total	17.0 %
Medication Evaluation	Count	100
	% of Total	14.9 %
Other	Count	28
	% of Total	4.2 %
Psychotherapy	Count	100
	% of Total	14.0 %
Transfer to secure setting	Count	28
	% of Total	4.2 %

	% of Total	4.2 %	0 %
Totals	Count	588	81
	% of Total	87.9 %	12.1 %

### Research Question H3

The Research Question H3 examined the relationship between clinical contact occurring or not occurring within seven days of discharge and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient psychiatric facility. The covariates of clinical contact occurring within seven days of discharge from an inpatient facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient facility were examined using the Kaplan-Meier estimator linear slope. This analysis was used to determine if the survival curve for individuals who received clinical contact within seven days of discharge and who were readmitted within 30 days of discharge from an inpatient psychiatric facility differed significantly from the survival curve of individuals who received no clinical contact within 30 days of discharge.

The percentage of participants who had no follow-up appointment within seven days of discharge was 51.6 % of the total participants ( $N = 345$ ). The percentage of participants who did receive a follow-up appointment within seven days of discharge was 48.4 % of the total participants ( $N = 324$ ). There were 43 cases that were censored (not included) due to no data being available for that participant in relation to whether or not they were admitted into an inpatient psychiatric facility within 30 days of discharge.

The data revealed a significant association between whether or not a participant engaged in a follow-up clinical contact within seven days of discharge from an inpatient psychiatric facility and if they were readmitted to an inpatient psychiatric facility with 30 days of discharge (Log Rank Mantel-Cox),  $p = .006$ , see Table 2).

Table 2

#### *Means and Medians for Survival Time*

		95 % Confidence Interval			
Was crisis appointment conducted within seven days of discharge?	Estimate	Standard Error	Lower Bound	Upper Bound	Estimate
No	10.699	1.301	8.149	13.248	.000
Yes	6.738	.931	4.913	8.563	.000
Overall	8.702	.787	7.159	10.245	.000
Overall Comparisons					
		Chi Square	Df	Significance	
Log Rank (Mantel-Cox)		7.518	1	.006	
Breslow (Generalized Wixcoxon)		9.481	1	.002	
Tarone Ware		9.395	1	.002	

The Log Rank Mantel Cox analysis compared the survival curve from both groups, those who received clinical contact within seven days of discharge and those who did not receive clinical contact within seven days of discharge. As can be seen in Figure 1, the survival curve for those participants who received no clinical contact within seven days of treatment had a slightly higher cumulative survival rate (approximately 0.1 % for the first 20 days after discharge from an inpatient psychiatric facility). After the tenth day, it was seen that the survival-rate difference decreased between the two covariates and dropped to less than half that amount by 30 days post discharge than those who did receive clinical contact with in seven days of discharge (see Figure 1).

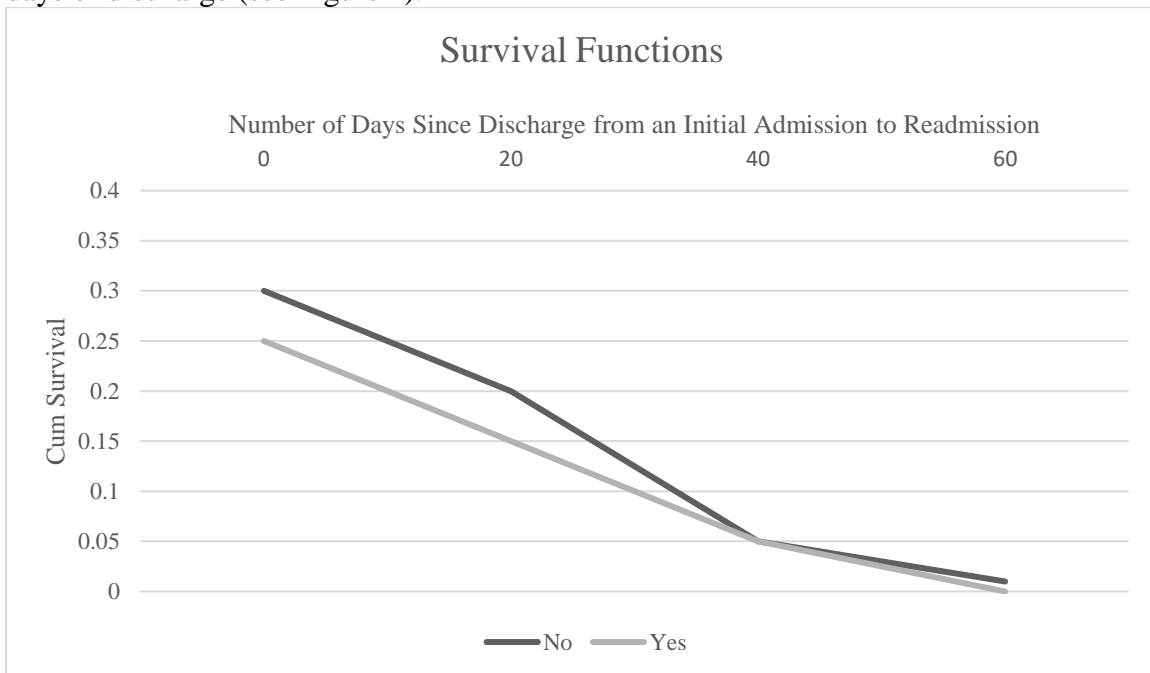


Figure 1. Survival functions

This indicates that those who received clinical contact within seven days of discharge were slightly less likely to “survive” (or in this case be readmitted sooner to an inpatient psychiatric facility) within the 30 days after discharge from an inpatient psychiatric facility. The finding that individuals who received clinical contact within seven days of discharge were more likely to be readmitted in less days following the initial admission seems to be contraindicated to what may be expected if clinical contact was a preventative measure to readmission to an inpatient psychiatric facility after being discharged from inpatient treatment.

Vijayaraghavan et al. (2015) found that in some cases, involvement in clinical contact after discharge from an inpatient psychiatric facility may actually increase readmission to a psychiatric facility after discharge. It was proposed by the authors of the study that if consumers are more closely monitored after discharge, they may be readmitted due to mental health professionals recognizing and responding to decompensation after discharge than those consumers who receive no after-care interventions.

The variable concerning number of days since discharge from initial admission to readmission was screened for violations of multi linear regression (e.g., multivariate normality,

skewness, kurtosis) and the data were found to be within acceptable parameters. Skewness was found to be .505 and kurtosis was -.944.

#### Research Question H4

The research question H4 examined the variables of age of the participant at the time of admission to an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred or not within 30 days of discharge from an inpatient psychiatric facility. The variables of race and gender were also assessed to see if any association occurred between these variables and readmission to an inpatient psychiatric facility within 30 days of discharge; however, these variables were not made available in the data provided, so they were not included in this study.

The covariates of age and if readmission to an inpatient psychiatric facility occurred or not within 30 days of discharge from an inpatient psychiatric facility were examined using a Chi Square crosstab analysis to determine if an association existed between the two covariates. The age of the participant was placed into two categories: 1) age 18 to 39 years old, and 2) age 40 to 65 years old. These age categories were chosen because these categories approximately corresponded to Erickson's developmental model, see Table 3. (Erickson, 1968).

Table 3

*Age Interval: Was Client Admitted to a Secure Setting within Thirty Days After Discharge*

Age Interval	Admitted	Not Released	Total
18 to 39 Years Old	Count 61 % of Total 9.1	402 60.1 %	463 69.2 %
40 to 65 Years Old	Count 33 % of Total 4.9	173 25.9 %	206 30.8 %
Totals	Count 94 % of Total 14.1%	575 85.9 %	669 100.0 %

The data revealed no significant association between age of the participant and if they were readmitted or not readmitted to an inpatient psychiatric facility within 30 days of discharge,  $p = .328$ . The results indicated that for Research Question H4, the null hypothesis was not rejected, and there was no support found for an association between the age of the participant and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient facility.

### Discussion

#### Research Question H1

While no significant association presented for the covariates of clinical contact within seven days of discharge from an inpatient psychiatric facility and readmission to an inpatient psychiatric facility within 30 days of discharge from an inpatient facility, the variable of type

clinical contact and when the clinical contact occurred post discharge from an inpatient psychiatric setting was revisited in Hypothesis H2.

A deeper drive into the data revealed interesting associations between the possible importance of how quickly the follow-up clinical contact was made after discharge from an inpatient psychiatric facility, if the participant was readmitted, and if he or she followed up with the clinical contact after discharge from an inpatient psychiatric facility.

The literature review on the issue of readmission to an inpatient psychiatric facility revealed that most studies on this topic focused on if a type of clinical contact was made after discharge from an inpatient psychiatric facility. The studies that specifically examined if a client was readmitted to an inpatient psychiatric setting took the following interval data: within 30 days post discharge of one to seven days post discharge, within 8 to 14 days after discharge, and within 15 to 30 days post discharge from an inpatient psychiatric facility, and compared the interval data against demographics, diagnosis, treatment variables, social dynamics, and patient information surveys (Hamilton et al., 2015). Other factors examined were studies that reviewed the presence of physical disabilities and if these conditions affected readmission rates within 30 days of discharge from an inpatient psychiatric facility (Gilmer & Hamblin, 2010).

The current research in the area of readmission rates into an inpatient psychiatric facility at this time is, at times, contradictory and inconclusive. While the current standard for care set by the American Psychiatric Association for aftercare following an inpatient psychiatric admission is that the follow-up appointments should occur within seven days of discharge from the inpatient psychiatric facility (Allen et al., 2002), the literature review for this study found no studies that specifically examined discharge from an inpatient psychiatric facility within this seven-day time period and related factors. The current study presented may be the first study of its kind that specifically reviews related factors and services provided within seven days of discharge from an inpatient psychiatric facility and readmission within 30 days to an inpatient psychiatric facility.

The findings of Hypothesis (H2) that follows reveal particularly relevant findings that may shed some light on why previous studies were inconclusive that were similar in nature to Hypothesis 1 (H1) of this study, which focused on the overall occurrence of clinical contact within a block of time (i.e., one week of discharge, within 30 days of discharge, etc.). This study may indicate that the timing of the clinical intervention after discharge, and if clients were likely to show for set clinical appointment times, may be associated. Clinical contact that occurs within seven days of discharge may be more indicative of clients being readmitted to an inpatient psychiatric facility. Previous studies that tended to focus on the first seven days as an interval period for intervention to occur may not have revealed significant findings.

## **Research Question H2**

The first finding for Hypothesis H2 examined the type of clinical contact set within the first seven days after discharge from an inpatient psychiatric facility and if the participant was readmitted or not within 30 days of discharge from an inpatient psychiatric facility. The findings demonstrated that those individuals who had a case management appointment set within the first seven days of discharge from an inpatient psychiatric facility was approximately eight times more likely than non clinical referrals, 32 % vs. 4 %, to not be readmitted to an inpatient psychiatric facility, such as housing and residential referrals. Other face-to-face clinical contacts with mental health professionals, such as having an intake,

medication, or psychotherapy appointments, were approximately twice as likely than those who were set for a case management appointment, 32 % vs 17 %, to not be readmitted to an inpatient psychiatric facility with 30 days of discharge (see Table 2). The question asked was why case management appointments, which were set, were so much more effective in reducing readmission to a inpatient psychiatric facility within 30 days of discharge.

If the follow-up appointment was set within the first seven days following discharge from an inpatient psychiatric facility, it was revealed that participants had case management appointments set more frequently than any other type of clinical contact within the first day after discharge. It was also determined that the frequency of clinical contact appointments being set decreased after the first day after discharge from an inpatient psychiatric facility. The percentage of participants who had a case management appointment set within the first day after discharge from an inpatient psychiatric facility, 12 % vs 6 % to 4 %, was approximately two to four times more likely to have a case management appointment set within the first day after discharge than those participants who had a case management appointment set from two to seven days after discharge from an inpatient psychiatric facility.

In relation to the type of clinical contact and the number of days between discharge and follow-up appointment, it was revealed that a significant association occurred when the participant attended an appointment within the first seven days after discharge from an inpatient psychiatric facility and the type of the clinical contact made. It was found that case management appointments that were attended, when compared to other types of clinical contact, were between 12 times to twice as likely to be seen within the day after discharge from an inpatient psychiatric facility. The highest percentage of follow-up clinical contact attended within the first 24 hours after discharge from an inpatient psychiatric facility was case management services,  $N = 69$  or 12.8 % .

The covariates of type of clinical contact and if a follow up appointment was attended within the first seven days after discharge from an inpatient psychiatric facility were examined using a chi square crosstab analysis to determine if an association existed between the two covariates. The data revealed a significant relationship between the type of clinical contact and if the participant was readmitted to an inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility,  $p = .001$ .

The data revealed that case management clinical contact presented with a higher percentage of appointments, more than any other category of clinical contact attended within the first seven days following discharge from an inpatient psychiatric facility. The findings revealed that case management appointments were attended at a rate of  $N = 223$ , (41.2 %), as compared to psychotherapy,  $N = 105$ , (19.4 %), intake,  $N = 97$ , (17.9 %), medication evaluation,  $N = 90$ , (16.6 %), and other referral,  $N = 24$ , (4.6 %). This seems to indicate that the association between type of clinical contact and readmission rates with 30 days of discharge from an inpatient psychiatric facility may have more to do with the availability of the clinical contact within the first seven days after discharge from an inpatient psychiatric facility rather than the type of clinical contact.

The type of clinical contact made and the categories found to be associated with higher levels of not being readmitted to an inpatient psychiatric facility within 30 days of discharge roughly correspond to the same categories found to be strongly associated with higher availability of the type of clinical contact made within the first seven days of discharge from the inpatient psychiatric facility. Since Case Management clinical contact was more immediately available within the first seven days after discharge then other types of clinical

contact, the availability may be the factor that was more significantly associated with decrease in readmission with in 30 days of discharge from an inpatient psychiatric facility than the specific type of clinical contact.

The data for the covariates of discharge with in the first seven days of discharge and if the appointment was attended were examined using a chi square crosstab analysis to determine if an association existed between the two covariates. It was revealed that if the appointment was set with in one day after discharge it was significantly associated with approximately twice the rate of attendance by the participant than with an appointment set two through seven days after discharge from an inpatient facility,  $p = .025$ . If the appointment for follow up clinical care was set with in 24 hours of discharge from an inpatient psychiatric facility, the percent of participants who attended the session was  $N=99$ , (18.3 %) and dropped to  $N=46$ , (8.5 %), with in two days after discharge. This trend was consistent for the participant attending the follow up clinical contact session for the rest of the week following discharge from an inpatient psychiatric facility with; three days after discharge,  $N=44$ , (8.1 %), four days,  $N=37$ , (6.8 %), five days,  $N=38$ , (7.0 %), six days,  $N=23$ , (4.3 %), and seven days,  $N=25$ , (4.6 %). This may possibly indicate that as more time passed after discharge the likelihood that a participant attended the follow up clinical appointment decreased.

Since almost all of the appointments set for the total sample, 544 out of 699 participants (80.9 %) were set within the first seven days of discharge from an inpatient psychiatric setting, this may present a strong indication of the importance of clinical contact within seven days of discharge from an inpatient psychiatric facility. It should also be noted that when this analysis included the appointments set within the first 30 days after the participant was discharged from an inpatient psychiatric facility, the significant association remained,  $p = .020$ . The number of clinical contact assessments set within the first 30 days after discharge from an inpatient psychiatric facility included 93.6 % of the sample,  $N = 626$ .

The data revealed that as time continued past the first week after discharge from an inpatient psychiatric facility, the likelihood that the participant attended a follow-up clinical contact appointment continued to drop. A participant seen within the first 24 hours after discharge was 60 to 90 times more likely to not attend a follow-up clinical contact after two weeks following discharge from an inpatient psychiatric facility. Figure 2 reveals that after two weeks, the rate that appointments were attended dropped to approximately .2 to .3 % and remained at that rate for the remainder of the last two weeks of the month after discharge from an inpatient psychiatric facility.



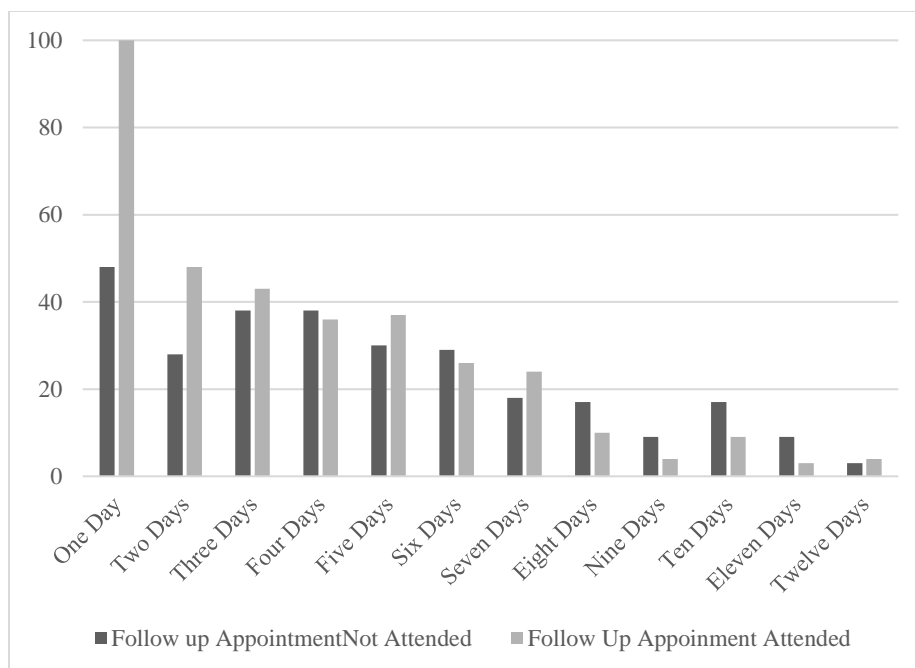


Figure 2. Rate that appointments were attended

This may indicate that the first week is an optimal period for participants following up with their appointments set for clinical care after discharge from an inpatient psychiatric facility. The attendance of clinical contact appointments diminished in the second week and had even less percentage of attendance in the final two weeks of the month following discharge from an inpatient psychiatric facility. This further strengthens the finding that the sooner the appointment is set following discharge from an inpatient psychiatric facility, the likelihood that the participant would follow up with that clinical appointment decreases with every day after day one following discharge from an inpatient psychiatric setting.

It was further revealed that participants who received case management appointments were four to two-to-four times, 12 % vs 3 % to 6 %, more likely to set these appointments than those participants who received other types of face-to-face clinical appointments within the first day after discharge from an inpatient psychiatric facility. After the first day following discharge from an inpatient psychiatric facility, case management appointments being set two-to-seven days following discharge from an inpatient psychiatric facility dropped to below 3.7 % compared all other face-to-face clinical contacts set within two-to-seven days following discharge from an inpatient psychiatric facility. This finding suggested that those participants who received a follow-up clinical contact appointment within the first day following discharge from an inpatient psychiatric facility may have had a preventative effect on readmission to an inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility.

Since having a case management appointment demonstrated a significant decrease of 50% in the readmission rate, 32 % vs. 14.9 % to 17 %, to an inpatient psychiatric facility within 30 days of discharge, as compared with those participants who received other forms of clinical contact with seven days of discharge, the next question was raised was if the participant attended the appointment set or not (see Table 2).

When the variable of if the clinical contact was attended with the first seven days of discharge from an inpatient psychiatric facility was examined, it was revealed that case

management appointments that were attended presented a significantly higher percentage of attendance than other types of clinical appointments attended within the first seven days following discharge from an inpatient psychiatric setting. Case management appointments attended were approximately twice as likely to be attended than other types of clinical contacts, 41 % vs 19 % to 16 %.

When the first seven days after discharge was examined related to the type of clinical appointments attended, it was even more clear that case management appointments attended within the first day following discharge from an inpatient psychiatric facility were significantly associated with attendance following discharge. Case management appointments that were attended dropped approximately 50 % from an appointment being attended within 24 hours of discharge and those who attended appointments following two days after discharge (18 % to 8 %). This trend continued as time progressed for the first two to seven days following discharge from an inpatient psychiatric facility where the attendance of a clinical appointment dropped to 4 % by seven days following discharge.

Up to this point in the literature, follow-up appointments were examined with an interval of time from seven days to up to 30 days following discharge from an inpatient psychiatric facility (Hamilton et al., 2015). These intervals may be more conducive to medical discharges for medical diagnosis. The medical model for examining the reoccurrence rates of readmission to medical units within 30 days of discharge and preventative interventions to reduce these readmissions has been mainly focusing on medical interventions associated with post discharge interventions, and in some cases (i.e., cancer and renal failure), readmission within 30 days as a planned course of treatment, (Gilmer, & Hamblin, 2010).

Clients admitted to an inpatient psychiatric facility may be different from medically admitted patients. The reasons and factors related to psychiatric readmissions after discharge within 30 days of discharge may be different from those medically admitted. Medical models pertaining to readmission may not be applicable to psychiatric readmission factors. The data in this study revealed that appointments set and attended with the first day following discharge from an inpatient psychiatric facility may significantly decrease readmissions within 30 days of discharge from an inpatient psychiatric facility. Most studies found in the literature search focused more on type of contact or if a contact occurred, rather than when the appointment occurred post discharge (Hamilton et al., 2015).

### **Research Question H3**

The Research Question H3 examined the relationship between whether clinical contact occurred within seven days of discharge and the number of days that occurred between the initial admission and readmission to an inpatient psychiatric facility within 30 days of discharge from an inpatient psychiatric facility. The covariates of whether or not clinical contact occurred within seven days of discharge from an inpatient psychiatric facility, and the number of days that occurred between the initial admission and readmission to an inpatient psychiatric facility within 30 days of discharge from an inpatient facility, were examined using the Kaplan-Meier estimator linear slope analysis. This analysis was used to determine if the survival curve for individuals who received clinical contact within seven days of discharge and who were readmitted within 30 days of discharge from an inpatient psychiatric facility differed significantly from the survival curve of individuals who received no clinical contact within 30 days of discharge.

The data revealed a significant association between if the participant received a clinical contact appointment within seven days of discharge from an inpatient psychiatric facility and the number of days occurring between the initial admission and when they were readmitted to an inpatient psychiatric facility with 30 days of discharge (Log Rank Mantel-Cox),  $p = .006$ . The Log Rank Mantel Cox analysis compared the survival curve from both groups, which included those who received clinical contact within seven days of discharge from an inpatient psychiatric facility and those who did not receive clinical contact within seven days of discharge from an inpatient psychiatric facility. As can be seen in Figure 1, the survival curve for those participants who received no clinical contact within seven days of treatment had a slightly higher cumulative survival rate, (approximately 0.1 % for the first 20 days after discharge from an inpatient psychiatric facility, and which dropped to less than half that amount by 30 days post discharge), than those who did receive clinical contact with in seven days of discharge (see Figure 1).

This may indicate that those who received clinical contact within seven days of discharge were slightly less likely to survive (or in this case, have a slightly lower number of days between the initial admission and being readmitted to an inpatient psychiatric facility) within the 30 days after discharge from an inpatient psychiatric facility. The finding that individuals who received clinical contact within seven days of discharge were more likely to be readmitted in less days after discharge from an inpatient psychiatric facility seems to be contraindicated to what may be expected if clinical contact was a preventative measure to readmission to an inpatient psychiatric facility after being discharged from inpatient treatment.

Vijayaraghavan et al. (2015) found that in some cases, involvement in clinical contact after discharge from an inpatient psychiatric facility may actually increase readmission to a psychiatric facility after discharge. It was proposed by the authors of the study that if consumers are more closely monitored after discharge, they may be readmitted due to mental health professionals recognizing and responding to decompensation after discharge than those consumers who receive no after-care interventions.

Hypothesis H2 examined the association between the covariates of if a type of clinical contact occurred within seven days of discharge from an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge. The relevant associations are possibly further clarified when these covariates are reviewed in light of other variables. The slight difference in the number of days between those participants who were admitted and those who were not admitted to an inpatient psychiatric facility within 30 days of discharge, and those who received a clinical contact intervention within seven days of discharge from an inpatient psychiatric facility, may be related to the effect of other variables. Unless other variables that were not examined in this study, such as diagnosis, gender, race, etc., could be examined in relation to the variable of number of days between initial admission and readmission to an inpatient psychiatric facility following discharge, possible reasons for this difference in survivability are not available.

This finding that clinical contact following discharge is associated with quicker readmission to an inpatient facility is contradicted by the findings in Hypothesis H2, which indicated that clinical contact within the first 24 hours was associated with fewer readmissions. Participants being readmitted with fewer days following an initial admission, if they received clinical contact, may be associated with more intensive clinical supervision following discharge, as proposed by Vijayaraghavan et al. (2015). It may also be related to the availability of care, which was also indicated as being associated with fewer readmissions

following discharge from an inpatient psychiatric facility. In any case, if clinical contact following discharge is associated with quicker readmission after discharge from an inpatient psychiatric facility, than this variable of clinical contact warrants further study to determine if this association is valid and what variables may be associated with this finding.

When the association of follow-up care is examined with other covariates, and the first seven days following discharge is broken out into each 24-hour interval following discharge, some significant associations emerge that may be relevant to whether or not the participant engaged in a follow-up clinical contact within seven days of discharge from an inpatient psychiatric facility, and if they were readmitted to an inpatient psychiatric facility with 30 days of discharge.

#### **Research Question H4**

The Research Question H4 examined the relationship of age of the participant at the time of admission to an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred or not within 30 days of discharge from an inpatient psychiatric facility. The data revealed no significant association between the age of the participant and if they were readmitted or not readmitted to an inpatient psychiatric facility with 30 days of discharge,  $p = .168$ . It was not surprising that age was not found to be a significant factor associated with readmission rates to an inpatient psychiatric facility. The literature review revealed no studies in which age was significantly related to readmission rates to an inpatient psychiatric facility for individuals within the 40 to 65 age range. Two studies were located that identified factors related to readmission in the over-65 age group.

These studies found that being male; having a diagnosis of bipolar disorder, and being single, were factors related to readmission within three months of discharge from an inpatient psychiatric facility for those individuals over 65 years of age (Woo et al., 2006). Prince et al. (2008) found in a study of elderly patients who were readmitted within six months of discharge had shorter lengths of stay and were hospitalized for affective disorders. These studies did not examine a sample that included those individuals between the ages of 40 and 65 who were hospitalized in an inpatient psychiatric facility. The literature review found no studies that specifically examined the 40-to-65 year old age group.

While the H4 Hypothesis revealed no significant relationship between the age of the participant at the time of admission to an inpatient psychiatric facility and if readmission to an inpatient psychiatric facility occurred within 30 days of discharge from an inpatient psychiatric facility, other findings revealed some insights into how age impacted other factors.

Furthermore, when the variable of age was analyzed using a paired sample t-test with the variables of *length of stay*, *number of days between discharge* and *if a follow up appointment was set*, significant findings in the difference between the two variables were indicated,  $p = >.000$  (see Table 4).

Table 4  
*T-Test*

		Paired Sample Test							
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	Upper Lower	95 % Confidence Interval of the Difference	t	df	Sig (2-tailed)
Pair 1	Age - Length of Stay	28.052	14.356	.683	26.710	29.394	41.081	44	.000
Pair 2	Age – number of days since discharge from initial admission to readmission	6.032	27.952	3.550	-1.066	13.131	1.699	61	.094
Pair 3	Age – number of days between discharge and follow-up appointment	30.047	13.489	.656	28.758	31,336	45.814	42	.000

These differences were observed when the percentages of length of stay were examined for each year of age of the participant.

The group of participants who were hospitalized between one and eight days started out with the younger age group of 18 to 39 vs. the age group of 40 to 65 years of age at the relative same length of stay for the first two days. After three days, the younger age group had an 8 % higher length-of-stay days than those in the older age group. On day four, this trend reversed, and the older age group started to increase and show an increase in length-of-stay days of 7 % higher length-of-stay days on day four. This trend slowly decreased until day seven to 1 % greater length-of-stay days for the older group and became even again between the two groups at day eight. This trend again fluctuated between the two groups for length-of-stay days of nine to 14 days and evened out between the two groups for lengths of stay between 15 to 30 days. Over half of the study participants were hospitalized between one and eight days, ( $N = 350$ ). This crosstabulation was found to demonstrate a highly significant association between the variables,  $p = > .000$ .

This difference between the two groups of younger participants, (18 to 39 years old), and older participants, (40 to 65 years of age), may be significant in how treatment planning for the two groups were developed when they were admitted to an inpatient psychiatric facility. If we review these two groups using Erickson's developmental model on which the age categories were based, we can possibly understand the differences between these two groups in how they see life goals and how life purposes emerged in these individuals, (Erickson, 1968).

The sixth stage of Erickson's psychosocial model of development is intimacy versus isolation that takes place between the ages of approximately 18 to 40 years of age. This stage focuses on intimacy with others, exploring longer-term relationships, and commitments with someone other than a family member. If the individual during this stage of development avoids intimacy, fears commitment, and relationships, this can lead to social isolation, loneliness, and sometimes depression. Being hospitalized in an inpatient psychiatric unit during this stage in life may be both indicative of these types of relationship problems and how well the individual may be capable of accepting help in an inpatient setting, (Erickson, 1968).

The seventh stage is generativity versus stagnation, which takes place during middle adulthood (ages 40 to 65 years of age). This stage of life focuses on *making your mark* on the world and creating and nurturing the things that will outlast an individual. During this time, individuals focus on giving back to society through raising children, being productive at work, and becoming involved in community activities and organizations. This generativity created sense of being a part of society and provides meaning to life in general. If individuals fail to find ways to contribute, stagnation and a feeling of being nonproductive, disconnected, or uninvolved with their community may develop with society as a whole. The process of being hospitalized at this time in a person's life may result in refusal to accept that they are failing, and they may deny the magnitude and existence of a mental health problem (Erickson, 1968).

The integrated model of care, which is described in an article by Falloon and Fadden (1995) discussed in Chapter II, relates how the vulnerability-stress model relates to mental illness. This model proposes that mental illness is a result of an individual being overwhelmed by environmental stressors, in combination with biological and genetic vulnerability, which may trigger a mental health disorder. Falloon and Fadden (1995), proposed each individual has a threshold where environmental factors can overwhelm them, resulting in a mental health condition. Through identification of this threshold and the impact of what may be identified as the buffer zone between life events crossing into dysfunctional management of adaptive management of stress, the individual can move efficiently and effectively into an adaptive stress management of life events.

By viewing the integrated approach model within the context of Erickson's developmental model (Erickson, 1968), one can see how admission to an inpatient psychiatric facility may be experienced by an individual as a life crisis. Erickson identified the need for these life crisis events to be addressed in order to move functionally onto later stages of development. The vulnerability stress model views certain life events as triggers for impairment of movement of the individual to manage functionally those events, which may result in mental health disorders, Falloon and Fadden (1995). When developing an understanding of why individuals in certain age categories react and interact when they are admitted to an inpatient psychiatric unit, the vulnerability stress model of integrated care can be woven into the provision of the assessment plan and administration of services.

These developmental issues during these specific stages of development may shed some light into how younger individuals' resistance to the intimacy of relationships with staff requests during interventions attempted during an inpatient psychiatric hospitalization. It may also shed some light on why participants were less likely to show up for follow-up appointments if they were in the older 40-to-65 age group. It may also be related to whether younger participants tended to be discharged earlier in the first few days and later in the week. The older group tended to have less inpatient days than their younger counterparts. This may be seen in the context of younger individuals being less able to tolerate the treatment environment than their older counterparts. As the week continued, older participants became less tolerant of the treatment environment due to seeing any longer term stay as demonstrating failure or stagnation. There are many possible explanations for the differences in length of stay in an inpatient psychiatric facility related to age. Further examination of this difference and its possible relevance deems further study of this variable.

### **Limitations**

This study presented with several limitations that may impact both generalizability and relevance to a general population past the sample. This sample did not have the ability include demographic data of gender and race, which could have been used to show that this sample could be generalizable to a broader population. Furthermore, this study only included a sample representing those with Medicaid from a specific area of the county. Those individuals who were insured through Medicare, private insurance, or who were indigent, were not represented in this study sample. This restricted the ability of this study to be shown as representative of other populations.

Furthermore, this study did not include some very relevant data concerning diagnosis, prior hospitalization record, severity of mental health issues, substance abuse issues, and other relevant data that could have been important in finding associations and developing an understanding of covariables, which may be confounding variables in relation to the variables examined in this study.

Since most of the data presented in this study were nominal or ordinal data, which did not lend itself to statistical assessment, the type of statistical analysis was limited. The data in this study represented categorical data and some interval data, which used non-parametric statistical analysis. These data sets were difficult, and in some cases, impossible to transfer into numerical data that could be statistically analyzed to reveal different and possible other relevant findings.

While these limitations are important and relevant, this does not preclude the usefulness and importance of this study in revealing findings that may shed some light onto the issues and factors that impact readmission to an inpatient psychiatric facility. The number of studies in the literature that examine factors that relate to why individuals are readmitted to a psychiatric facility after discharge is currently lacking in number and conclusive empirical findings (Brody, 2016). This study may be the first study that examined, in depth, the factors related to participation in follow-up care after discharge from an inpatient psychiatric facility within the first seven days of discharge. The findings of the importance of follow-up clinical contact within the first 24 hours following discharge may provide direction for further research into this area.

### Implications for Theory and Practice

This study has identified several issues that currently impact the theory and practice involving readmission to an inpatient psychiatric facility after discharge. These areas include continuity of care and follow-up care, which has been shown to be lacking in the identification of specific characteristics of how the inpatient mental health industry is responding to the clinical needs of the patients they serve, and the development of intervention strategies to reduce readmission (Brody, 2016). Furthermore, these continuity-of-care interventions and strategies and what constitutes continuity of care need to be refined in order to develop empirically based procedures, protocols, and models to decrease readmission to inpatient psychiatric facilities within 30 days of discharge (Adair et al., 2003).

It has been established that the first 30 days following discharge from an inpatient psychiatric facility needs to be a focus by the behavioral health system (Hamilton et al., 2015). Scrutiny of readmission rates to inpatient facilities has increased since the institution of the US Patient Protection and Affordable Care Act (ACA). This legislation developed penalties for medical institutions demonstrating higher levels of readmission rates after an initial inpatient hospitalization. The Medicare Payment Advisory Commission identified hospital readmissions as a preventable and costly issue that requires attention (Kocher & Adashi, 2011). It has also been established that if an individual is readmitted within 30 days of discharge, that steps should be pursued to institute specific intervention strategies that could impact reducing these readmissions (Hermann et al., 2006).

The inpatient mental health industry recognizes that the time between discharge and when a follow-up appointment occurs should be a quality benchmark or standard of care, and that this benchmark should be established as seven days (Hermann et al., 2006; Craig, Lin, El-Defrawi, & Goodman 1985). The American Psychiatric Association has set a standard of care of no more than one week for follow-up care to occur after discharge from a psychiatric urgent care facility (Allen et al., 2002). Even though this is an established standard of care, less than half of the discharges from inpatient psychiatric facilities meet this standard (Hamilton et al., 2015).

In order to develop empirical evidence that can be used to meet and establish some of these issues, this study examined data concerning the factors associated with both discharge from an inpatient psychiatric facility within 30 days of discharge and the impact that clinical contact within seven days of discharge had on reducing readmissions to an inpatient psychiatric facility. This study revealed a number of relevant findings that directly related to the theory and practice of the provision of services and development of intervention strategies for those individuals placed in inpatient psychiatric facilities.

The finding that those individuals who had a case management appointment set within the first seven days of discharge from an inpatient psychiatric facility was approximately eight times more likely than non-clinical referrals, 32 % vs. 4 %, to be *not* readmitted to an inpatient psychiatric facility. This may indicate that the type of referral following discharge could have impacted both the likelihood of decrease in readmission following discharge and also if the individual attended the follow-up appointment.

It was found that clinical contact with mental health professionals, such as having an case management appointment vs. other types of clinical contact, such as intake, medication, or psychotherapy appointments, were approximately twice as likely, 32 % vs. 17 %, to be not



readmitted to an inpatient psychiatric facility with 30 days of discharge (see Table 2). It was further determined that the timing of the follow-up appointment could have been a more critical factor than the type of clinical contact that occurred.

The study findings revealed that if the follow-up appointment was set within the first seven days following discharge from an inpatient psychiatric facility, case management appointments were set significantly more frequently than any other type of clinical contact within the first day after discharge. More importantly, participants who received a case management appointment attended those appointments at a significantly higher percentage of attendance than other types of clinical appointments within the first seven days following discharge from an inpatient psychiatric setting. Case management appointments attended were approximately twice as likely than other types of clinical contacts, 41 % vs. 19 to 16 %, to be attended.

When this was examined even more closely, it was determined that case management appointments attended within the first day following discharge from an inpatient psychiatric facility was significantly associated with attendance following discharge. The number of individuals who attended case management appointments dropped approximately 50% within 24 hours of discharge, as compared with the number of individuals who attended appointments following two days after discharge (18 % to 8 %). This trend continued as time progressed for the first two to seven days following discharge from an inpatient psychiatric facility, where the attendance of a clinical appointment dropped to 4% within seven days following discharge.

When age was examined as a factor, it was found that older participants, ages 40 to 65, were twice as likely, 32 % vs. 16 %, not to attend their follow-up appointment set after discharge from an inpatient psychiatric facility. While this finding did not meet levels of significance, it may be relevant in directing attention to age as a factor in insuring that attendance of a follow-up clinical appointment is successful. Individuals discharged from an inpatient psychiatric facility in the older age category of 40 to 65 years of age may need more assistance than younger counterparts to attend follow-up clinical care after discharge from an inpatient psychiatric facility.

Up to this point in the literature, follow-up appointments were examined with intervals of time from seven days to up to 30 days following discharge from an inpatient psychiatric facility (Hamilton et al., 2015). These findings have implications on what type of clinical contact should be pursued following discharge from an inpatient facility, and how soon that appointment should be accomplished in order to decrease readmissions. The data in this study revealed that appointments set and attended within the first day following discharge from an inpatient psychiatric facility significantly decreased readmissions within 30 days of discharge from an inpatient psychiatric facility. This has significant implications for the development of follow-up care protocols when individuals are discharged from an inpatient psychiatric facility.

A further implication for practice and theory is in relation to how age can possibly impact how an individual interacts with staff and views treatment. When length of stay was cross tabulated with age the first 8 days, which included the younger age group of 18 to 39 years vs. the age group of 40 to 65 years, significant findings were established,  $p = > .000$ . At day three of hospitalization, the younger age group had an 8% higher length-of-stay in days than those in the older age group. On day four, this trend reversed, and the older age group started to show an increase in length-of-stay in days, a 7 % higher length-of-stay days on day four. The trend fluctuated slightly between the two groups for length-of-stay days of

nine to 14 days and evened out between the two groups for lengths of stay between 15 to 30 days.

This finding may indicate that there may be differences in how different age groups within the two categories identified in this study, 18 to 39 years of age and 40 to 65 years of age, may need separate and defined approaches while in treatment and in discharge planning. This study applied the Erickson's developmental model, on which the age categories were based (Erickson, 1968), and the integrated care model (Falloon & Fadden, 1995) to understand the differences between these two groups, how these two groups saw life goals, and how life purpose emerged in these individuals, (Erickson, 1968). Based on Erickson's theories of psychosocial development process of being hospitalized at this time in a person's life, age group may result in refusal to accept that they are failing in life, denial of the magnitude and existence of a mental health problem in the older population, and difficulty in accepting the intimacy that is inherent in the therapeutic process when a younger individual is psychiatrically hospitalized.

This may have implications in how a younger individual is approached and the type of intervention used during an inpatient psychiatric admission. For this group of individuals, in the 18 to 39-year-old age category, assessment of the individual's ability to accept and engage in more intimate forms of intervention may need to be integrated into treatment approaches, such as one-on-one psychotherapy. The request for immediate involvement in psychotherapy may not be conducive to individuals in this age bracket where issues of intimacy, commitment, and engagement with others are primary psychosocial issues, (Erickson, 1968). Less intimate approaches, such as psychosocial education, may be more effective.

With an older individual in the 40 to 65-year-old category, the issues of how they view themselves and the impact an inpatient psychiatric hospitalization may have on their self-esteem may need to be integrated into intervention approaches and strategies. This particular category of individuals in the 40 to 65-year-old range, according to Erickson's model of psychosocial development, deals with issues of generativity versus stagnation, which focuses on making your mark on the world and creating and nurturing the things that will outlast an individual. The process of being hospitalized at this time in a person's life may result in refusal to accept failure and the denial of the magnitude and existence of a mental health problem. Special care and counseling may be needed during an inpatient psychiatric placement for this older population to deal with these issues, and recommendations for these issues may need to be continually reviewed in treatment through individual psychotherapy and possibly with an aftercare support group for individuals in this age category (Erickson, 1968).

The integrated model of care, which was described in an article by Falloon and Fadden (1995) discussed in Chapter II related how the vulnerability-stress model relates to mental illness. This model proposes that mental illness is a result of an individual being overwhelmed by environmental stressors, in combination with biological and genetic vulnerability, which trigger the disorder. Falloon and Fadden (1995) proposed each individual has a threshold where environmental factors can overwhelm them, resulting in a mental health condition. The identification of these threshold events during an inpatient psychiatric placement and how these life events impact the buffer zone between life events may enable individuals who are dealing with inpatient psychiatric care to manage stress and move the individual into adaptive stress management of life events. Inpatient psychiatric placement may adversely affect many areas: losing employment, development and change in relationships, and even homelessness, all of which may thus increase stress in an individual's life;

By viewing the integrated approach model within the context of Erickson's developmental model (Erickson, 1968), one can see how admission to a inpatient psychiatric facility may be experienced by an individual as a life crisis. The vulnerability stress model views certain life events as triggers for movement past the ability of the individual to manage those events functionally, resulting in mental health disorders. When developing an understanding of why individuals in certain age categories react and interact when they are admitted to an inpatient psychiatric unit, the vulnerability stress model of integrated care can be woven into the provision of the assessment plan and administration of services.

### **Recommendations for Further Research**

Three areas for further research may be pursued based on the findings of this study. First, that the focus on the importance and impact that immediate follow-up clinical contact within the first 24 hours following discharge is relevant in decreasing psychiatric inpatient readmissions within 30 days of discharge. The replication of this finding and further empirical studies that would test this finding should be pursued to determine if this finding is valid, and if it can be generalized to broader populations. The standard of clinical contact within seven days of discharge from an inpatient psychiatric setting has been established as a standard (Allen et al., 2002; Craig et al., 1985; Hermann et al., 2006). Even with this standard being set at this point, there is no empirical findings in the literature on which this standard has been set. The importance of developing empirical-based research that can be used to develop methodologies and treatment strategies for follow-up clinical care cannot be understated. As greater demands are made on the mental health inpatient industry to demonstrate how effective they are in decreasing psychiatric inpatient readmissions within 30 days of discharge, this type of research will become more important as time goes on.

Secondly, this study implies that the type of clinical contact may not be as important as how soon that clinical contact is made after discharge. At the present time, the literature review concerning the type of clinical contact and its impact on readmission to an inpatient psychiatric facility is contradictory and inconclusive (Barker et al., 1999, Fontanella et al., 2009; Ilgen et al., 2008; Maples et al., 2012, Pfeiffer et al., 2016; Silva, Bassani, & Palazzo, 2009, Vijayaraghavan et al., 2015). The need to establish if the type of clinical contact is a factor in decreasing readmission, and what types are more effective in decreasing inpatient psychiatric readmissions within 30 days of discharge, needs to be clinically researched to develop an empirically based model for clinical care standards and protocols following discharge from an inpatient psychiatric facility. This study only creates more questions instead of giving a clearer direction for research in decreasing readmissions on the effectiveness of types of follow-up clinical care after discharge.

Finally, research may be needed to be pursued in developing a better understanding of whether age has an effect on how inpatient care is perceived and accepted by different age categories. Research also needs to be developed to see if Erickson's psychosocial developmental model (Erickson, 1968), and continuity care models such as Falloon and Fadden's (1995) integrated care model, is effective and useful in understanding how age impacts inpatient psychiatric care and after care. The inclusion of broad-based demographic variables, such as race, gender, socio-economic standing, type of insurance coverage, etc., may have provided greater ability to apply this research to general populations. Further research

needs to include more board-based demographics and examine how these may impact readmission rates and clinical contact.

### Conclusion

The findings of this study may suggest that further research is needed in the area of when follow-up care occurs after discharge from an inpatient psychiatric setting. A clear and refined empirically based model that demonstrates understanding and application of when the type of clinical contact is used after discharge from an inpatient psychiatric facility to decrease readmissions is not currently available and needs to be established. Furthermore, there is a need to develop a better understanding of how demographics and psychosocial factors impact readmission rates after discharge from an inpatient psychiatric facility.

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