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The difference between inpatient psychiatric facilities implementing crisis intervention teams or psychiatric emergency walk-in services in the number of patients admitted for psychiatric treatment

Master´s Dissertation in Mental Health Policy and Services

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ABSTRACT

Psychiatric crisis intervention teams (CITs) are growing throughout the United States. International research on the effectiveness of CITs in decreasing admissions to psychiatric hospitals has shown mixed results. Research in the US is limited to descriptions of a small number of high-quality CITs and examinations of their effectiveness on the community level. This study uses a national sample of 1,887 inpatient psychiatric facilities from the National Mental Health Services Survey to examine (1) the difference in number of inpatient psychiatric patients between facilities implementing a CIT and those that do not by facility type and (2) the difference in number of inpatient psychiatric patients between facilities offering psychiatric crisis walk-in services and those that do not by facility type. Analyses show that private-run psychiatric facilities that operate a CIT or psychiatric emergency walk-in service reported more patients receiving inpatient care than facilities that reported they did not while government-run facilities that operate a CIT or walk-in service reported less patients than facilities that reported no CIT or walk-in service. These results suggest a difference in type of facility that may be influencing the number of patients receiving inpatient treatment. Further investigation should consider characteristics of facilities and demographics of the population they serve as factors in admission to psychiatric hospitals.

Key words: Psychiatric Emergency, Crisis Intervention Team (CIT), Hospital Prevention

RESUMO (PORTUGUESE)

Equipas de intervenção crise psiquiátricas (CITS) estão crescendo em todo os Estados Unidos. investigação internacional sobre a eficácia dos CITs em diminuir internações em hospitais psiquiátricos tem mostrado resultados mistos. Research nos Estados Unidos é limitado a descrições de um pequeno número de CITs de alta qualidade e exames de sua eficácia no nível da comunidade. Este estudo utiliza uma amostra nacional de 1.887 instalações de internamento psiquiátrico da Pesquisa de Serviços de Saúde Mental Nacional para examinar (1) a diferença no número de pacientes psiquiátricos internados, entre estabelecimentos de execução de um CIT e aqueles que não o fazem por tipo de instalação e (2) a diferença em número de pacientes psiquiátricos internados entre instituições que oferecem crise psiquiátrica serviços de urgência e aqueles que não o fazem por tipo de instalação. As análises mostram que instituições psiquiátricas privadas prazo que operam a CIT ou serviço walk-in de emergência psiquiátrica relataram mais pacientes recebem cuidados em regime de internamento do que as instalações que relataram não enquanto as instalações administradas pelo governo que operam a CIT ou

walk-in serviço relataram menos pacientes do que instalações que relataram nenhum CIT ou serviço walk-in. Estes resultados sugerem uma diferença no tipo de instalação que pode ser influenciando o número de pacientes que recebem tratamento hospitalar. Outras investigações devem considerar as características das instalações e dos dados demográficos da população que servem como fatores de internação em hospitais psiquiátricos

Palavras-chave: Emergência Psiquiátrica, Crise equipa de intervenção, Prevenção Hospital

RESUMÉN (SPANISH)

Equipos de intervención en crisis psiquiátricas (CIT) están creciendo en todo Estados Unidos. La investigación internacional sobre la eficacia de las CIT en la disminución de ingresos en hospitales psiquiátricos ha mostrado resultados mixtos. La investigación en los Estados Unidos se limita a las descripciones de un pequeño número de las CIT de alta calidad y los exámenes de su eficacia en el ámbito de la comunidad. Este estudio utiliza una muestra nacional de 1.887 instalaciones de hospitalización psiquiátrica de la Encuesta de Servicios de Salud Mental Nacional para examinar (1) la diferencia en el número de pacientes de hospitalización psiquiátrica entre las instalaciones que aplican un CIT y los que no lo hacen por tipo de establecimiento y (2) la diferencia en el número de pacientes de hospitalización psiquiátrica entre las instalaciones que ofrecen crisis psiquiátrica sin cita previa en los servicios y los que no lo hacen por tipo de establecimiento. Los análisis muestran que las instituciones psiquiátricas a ejecutar privadas que operan un CIT o servicio a ras de emergencia psiquiátrica reportaron mayor número de pacientes que reciben atención hospitalaria de instalaciones que informaron que no lo hicieron mientras que las instalaciones de gestión de gobierno que operan un CIT o servicio sin cita reportaron menos pacientes que instalaciones que no informó de CIT o servicio ras de suelo. Estos resultados sugieren una diferencia en el tipo de instalación que pueden estar influyendo en el número de pacientes que reciben tratamiento con hospitalización. La investigación adicional debe considerar las características de las instalaciones y demografía de la población a la que sirven como factores de admisión en hospitales psiquiátricos.

Palabras clave: Emergencia Psiquiátrica, Equipo de Intervención de Crisis, Prevención del hospital

LITERATURE REVIEW

The World Health Organization's Global Burden of Disease study found that mental disorders account for half of the ten leading causes of disability (Murray & Lopez, 1996). With a large proportion of the population experiencing some level of mental illness, it is important that systems are in place to provide adequate care. One aspect of an adequate system is the provision of services for people experiencing mental health crises.

The American Psychiatric Association developed its second task force on psychiatric emergency services in 1998 with the goal of developing a formal definition of a psychiatric emergency and identify services that divert patients from hospitalizations (Allen et al, 2002). The task force defined a psychiatric emergency as "an acute disturbance of thought, mood, behavior or social relationship that requires an immediate intervention as defined by the patient, family or the community."

There are several types of mental health crises. Many crises are related to long-term, serious persistent mental illness such as schizophrenia, major depressive disorder, or bipolar disorder. Other crises are related to severe depression. Some crises are a result of suicide ideation or attempt. These crises sometimes result in a person seeking or being referred to treatment in an inpatient setting.

Often times inpatient treatment for mental health crisis is avoided by patients, caregivers, and providers. There are a few reasons why inpatient treatment is often averted. The number of inpatient psychiatric beds have decreased due to the shift from hospitalizing psychiatric treatment to the push for community services. Providers, patients and advocates mostly prefer treatment in the least restrictive environment

possible. Crisis resolution/intervention programs provide the opportunity to avert inpatient treatment for those clinically appropriate for lesser restrictive care.

This paper will discuss the history of deinstitutionalization in the United States and its effect on psychiatric inpatient bed availability, the rise of crisis intervention programs, and the global evidence on intervention program's effectiveness in decreasing inpatient psychiatric hospitalizations.

Deinstitutionalization and the reduction of inpatient beds

Within mental health field in the United States, there has been an ideological push towards providing individuals within treatment in the community rather than treatment in an institution. This shift led to the deinstitutionalization movement. Deinstitutionalization is the replacement of long-stay psychiatric hospitals with smaller, less isolated community-based alternatives for the care of mentally ill people (Bachrach, 1996). The 1955 policy that began moving severely mentally ill people out of large state institutions and then closing part or all of those institutions (Torrey, 1997). As a result, there has been a sharp decrease in the number of psychiatric beds in the US throughout the last 60 years. The change in inpatient hospitalization rates for psychiatric treatments has led to the decrease in the number of available inpatient beds and the growth of crisis intervention programs. The number of beds nationwide dropped from approximately 400,000 in 1970 to 50,000 in 2006 (Tuttle, 2008; Alakeson et al, 2010). Furthermore, between 1990 and 2000, inpatient psychiatric beds per capita declined by 27 percent (DHHS, 2004)

In conjunction with the deinstitutionalization movement, the country also implemented the Community Mental Health Centers Act of 1963 which reshaped the mental health system as the country knew it. The newly designed mental health system was intended to create a mental health center in every community to serve those who had been moved out of the institutions. The act also designated emergency psychiatric care as one of the five essential services in federally funded mental health service systems (Geller, 2000). However, the vision of the 1960s act was never adequately funded or fully realized (Grob and Goldman, 2007). The shift in mental health care delivery came with a decrease in mental health spending in the country. Spending for mental health was 30 percent less in 1997 than in 1955, when adjusted for population growth and inflation.

The increase in psychiatric boarding

There are multiple causes for psychiatric ED boarding, including a lack of inpatient beds, inadequate access to mental health clinicians within hospitals, and a shortage of outpatient resources. (Abid et al, 2014). Lower spending on mental health played an integral role in the scarce availability of services in the community and thus increased the likelihood of psychiatric crisis and the use of emergency room care. Now individuals seeking psychiatric treatment do not have many options for inpatient treatment and have minimal opportunities to obtain outpatient services. Due to the low availability of inpatient treatment, individuals seeking inpatient treatment have longer waits for a bed (Alakeson et al, 2010). These people are likely to end up in emergency rooms of medical hospitals leading to hospital overcrowding. This trend has been increasing in the US throughout the years. In 2007, 12.5 percent of adult ED visits in US

hospitals were mental health related, compared to 5.4 percent in 2000 (Owens et al, 2010). In a 2008 survey of 328 emergency room medical directors, the American College of Emergency Physicians found that about 80 percent believed that their hospitals "boarded" psychiatric patients (Alakeson, et al, 2010), meaning the patients spent amounts of times waiting in the emergency for a hospital bed or for a transfer to another inpatient facility. Psychiatric patients who are boarded in an emergency department can be placed in a bed, in the department's hallways, psychiatric-specific area, or in a locked unit (Bender et al, 2009).

These boarding times are typically long and impede the therapeutic process for patients seeking mental health treatment. For example, boarding times in the US state of Georgia is an average of thirty-four hours, with many patients waiting several days for an inpatient bed. Similarly in the US state of Maryland, many emergency rooms sometimes board patients for several days at a time. (Alakeson, et al, 2010). Research using the National Hospital Ambulatory Medical Care Survey Emergency Department databases showed that between 2001 and 2006 in the United States, the average duration of ED visits for psychiatric complaints was 42% longer than for non-psychiatric issues. Another study showed that psychiatric conditions led to a length of stay that was twelve hours longer than an ED visit for a non-psychiatric issue. (Nicks & Manthey, 2012)

There are several negative effects of psychiatric boarding. Longer lengths of stay within the ED have led to increased provider stress, greater risks for adverse events, and reduced patient satisfaction (Weiss, 2012). Boarding patients can lead to heightened crisis due to being in a fast-paced environment with often exposure to trauma. Prolonged boarding in the ED for psychiatric patients is associated with lower quality care for

psychiatric patients. Survey data from the Emergency College of Emergency room physicians showed that 60 percent of emergency department directors reported not providing psychiatric services to patients boarding in the emergency department. (ACEP, 2008) In addition, the presence of psychiatric patients in the ED affects the care received by other patients because boarded patients reduce ER capacity and increase pressure on staff (Alakeson, et al, 2010). Boarding can also have a negative financial impact on hospitals because insurance reimbursement rates typically do not account for boarding (Alakeson, et al, 2010) and hospitals cannot turn patients away due to inability to pay.

Description of Crisis Intervention Programs

Crisis intervention programs are implemented within mental health systems to offer alternatives to inpatient treatment. The primary goal of a crisis service is to assist individuals with psychiatric crises to resume community functioning by preventing unnecessary hospitalization to the greatest possible extent through the formulation and implementation of alternative treatment plans. (Stroul, 1993) By intervening early, mental health crisis teams can help prevent costly and unnecessary stays in hospitals and jails. In the United States in 2009, there were over 5,000 mobile crisis interventions for adults and over 3,000 for children. Of these, only 11 percent of adults and 28 percent of children were referred to a hospital emergency department or inpatient treatment (NAMI Minnesota).

Crisis services are more than just a single service for people experiencing a mental health crisis. Crisis intervention teams provide several layers of services. Staff work to stabilize clients in crisis in order to assist them to return to their pre-crisis level

of functioning, resolve the situation that may have led to the crisis, and link clients with services and supports in the community in order to meet their ongoing mental health needs (Stroul, 1993). The multi-faceted approach to crisis intervention is understood as fundamental in addressing the diverse needs of the population. Stroul, 1993 lists out components that are crucial for crisis response and intervention: Crisis telephone services, walk-in services, mobile crisis teams, residential services, and training programs.

Crisis Telephone Services are often the first point of contact with the mental health system for a client in crisis or a member of his or her support system. Crisis telephone services are most often available 24 hours a day providing screening and assessment, telephone counseling, and referrals with information. A primary goal of telephone crisis services is to assess the need for face to face crisis intervention services and to arrange for those services as needed. Crisis telephone staff focus on triaging all requests for services. With the assessment of the crisis, the staff person can determine the types of treatment needed. The staff person can then develop an intervention plan. The telephone crisis provider also provides information to callers on other agencies and resources within the communities that provide care most appropriate to their needs. Telephone services are also used for brief counseling in which patients can receive immediate access to a supportive person in a confidential and empathetic manner.

Walk in services are often available at a mental health facility for people to receive immediate face-to-face screening, assessment, intervention, and linkage to services. Unlike telephone services, walk-in services are usually available for a limited time, typically during business hours. While some psychiatric hospitals have walk-in

services within their facility, people often utilize the emergency department for this service. Like telephone services, walk in services provide triaging of all requests for services. With the assessment of the crisis, the staff person can determine the types of series needed and then develop an intervention plan. Crisis intervention and stabilization delivered through walk in services typically include medication, counseling, and connections to community resources and ongoing supports.

Mobile crisis teams provide crisis services on an outreach basis through which a provider will meet the person and support member experiencing a crisis outside of the traditional clinical setting. Mobile crisis providers will deliver the services in the setting where the crisis is occurring, and often try to reach people considered difficult to reach. They would go in the homes, work settings, ERs, police stations, jails, human services agencies, and anywhere in the community to meet the client. Similar to telephone and walk in services, mobile crisis teams provide screening and assessment, stabilization, brief treatment, and referrals to services.

Residential services provide crisis intervention within a residential, supervised, non-hospital setting. The purpose of residential services is to remove the person from the environment that is precipitating the crisis while providing temporary housing and treatment. Residential services are helpful for people experiencing elevated crises due to homelessness or triggers within their home. Residential services are different from inpatient psychiatric services due to their voluntary, less structured features. Patients are typically free to leave a residential facility.

Some crisis intervention programs also incorporate a *training component for other agencies* such as law enforcement. Many communities train law enforcement agencies,

police academy recruits, and emergency room staff on mental health emergency procedures, how to access the crisis system, the appropriate use of crisis services, and emergency involuntary commitments, handling of mental health emergencies, suicide assessment and intervention, defusing anger and violence.

Crisis intervention programs seek to minimize inpatient psychiatric admission through screening individuals for treatment need and identifying the lowest level of care possible. Lower level of care options include admission into an outpatient program, home treatment programs, and partial hospitalization programs. Program staff utilize screening tools such as suicide and level of functioning assessments to determine if a patient would benefit for more restrictive, inpatient treatment or therapy while maintaining their lives in the community.

The American Psychiatric Association highlighted a model crisis intervention program that is well-developed and successful within its urban community. The Comprehensive Emergency Psychiatric program in Harris County, Texas provides emergency care for people experiencing psychiatric crises. The program is recognized for providing high-quality psychiatric assessments and interventions outside an emergency room This model has six core features, several of which are iterations of Stroul's (1993) identified essential components for a crisis intervention program: A 24 hour public telephone line, a mobile crisis outreach team, a voluntary emergency residential unit, a crisis counseling team, as well as a crisis stabilization unit with beds for sixteen adult psychiatric patients. The Comprehensive Emergency Psychiatric program is staffed by psychiatrics, social workers, nurses and mental health technicians and serves about 11,000 patients per year. Of the adult patients served between the years 2006 and

2007, 78 percent were diverted from hospitalization. Furthermore, the program's mobile crisis team was able to avoid hospitalization for 96 percent of the patients they assessed and provided intervention for in between 2007 and 2008 (Alakeson et al, 2010).

Effectiveness of crisis intervention programs

Crisis intervention programs vary in their effects on admissions rates for hospitals. Some studies highlight the effectiveness of crisis intervention programs in reducing hospitalizations and finding alternatives to inpatient treatment. Other studies showed that crisis intervention programs had no impact of hospital admission rates. Researchers in Norway have found that crisis resolution teams are associated with lower psychiatric hospital admission rates (Hasselberg et al, 2013). Hasselberg and colleagues examined 680 patients receiving care from 8 crisis resolution teams in Norway over a 3 month period to understand the characteristics of the crisis resolution teams, and to determine any differences in admission practices between the teams and to identify variables that predict a psychiatric admission from the crisis resolution team. The researchers found significant differences between the crisis resolution teams in inpatient ward admission rates in that teams with higher rates also had patients with more severe mental health problems (assessed by the GAF functioning scale and the Health of the Nation Outcome Scale HoNOS). According to these Norewegian studies, the crisis resolution teams only admitted about 21 percent of their patients. The study provided evidence for the country that they achieved their goal of avoiding inpatient psychiatric treatment for most patients, while those with more severe or complex issues were most likely to still be admitted. Contrary to the Norway confirmation, researchers in England

have found that crisis intervention programs have no effect on inpatient admissions. (Jacobs & Barrenho, 2011). Jacobs and Barrenho conducted a quasi-experimental study examining national level data two years before and four years after the implementation of crisis resolution teams policy in England. Researchers found that the crisis resolution team policy has not made a significant difference to admissions in psychiatric hospitals in England. Furthermore, the study found no significant difference between facilities with crisis resolution teams and facilities without before or after the policy was implemented.

Although the evidence is conflicting, study results agree that there are a set of patient characteristics associated with hospitalization even with the existence of crisis intervention services. Similar to the findings in Norway by Hasselberg and colleagues, a study in England examining the characteristics of patients most likely admitted to a psychiatric unit even with the existence of a crisis intervention program were patients that were uncooperative during the assessment, at risk of self-harm or neglect, a history of involuntary admissions, and who were assessed outside of normal office hours or in hospital emergency departments (Cotton et al, 2001). Additionally, a case control study conducted by Tyler et al showed two interesting findings: 1) There was no significant difference in rate of psychiatric admissions before and after the implementation of a crisis intervention program and 2) The results showed a difference in the types of admissions before and after crisis intervention programs were implemented. The study found a decrease in voluntary admissions and an increase in compulsory admissions (Tyler et al, 2010).

Importance of community resources for effective crisis intervention

Another important factor in having a successful crisis intervention team is the availability of community mental health treatment and support. Providers of crisis services, including myself emphasize this need. Providers can divert patients to lesser levels of care only if those care levels actually exist and can provide treatment on an ongoing basis. The existence of a crisis intervention service can only thrive (by reducing hospitalization) if they have appropriate alternatives for the patients. Many communities implementing crisis intervention services note that accessing mental health services and ongoing support within the community is challenging.

Lack of community mental health resources can lead to several issues for the individual that sought crisis intervention services. Patients may wait for the follow-up and ongoing care which can facilitate another crisis occurring. These delays can also keep people in crisis services until staff can find appropriate follow up care which creates a bottleneck of patients and hinders the treatment of other experiencing a crisis. Furthermore, the lack of services in the community lead people to rely too heavily on crisis services when they can be appropriately treated with an ongoing service. Many providers explain that a large portion of crises could be averted if the person had access to the ongoing support and services that they need.

Patient and family satisfaction with crisis intervention programs

Crisis intervention programs have mixed reviews from consumers, advocates, and families. Many praise crisis intervention programs for providing the opportunity for maintaining a normal life and including their families in the process. Others challenge

crisis intervention teams for commandeering the decision for mental health treatment and violating human rights.

The opportunity for a lower level of care is typically pleasing for consumers and their families. Several communities implementing a crisis response program noted the importance of treating a patient in their natural environment and include families and support systems to facilitate continued functioning within the community (Stroul, 1993). Patients and families often prefer treatment within the community due to its flexibility and the patient's ability to maintain a level of normalcy in their lives. Communities implementing a crisis response program report that their interventions can provide the opportunity to empower clients by helping them develop the skills and identify resources and supports needed to improve their functioning and ability to avoid crises in the future (Stroul, 1993). Furthermore, treatment outside of a hospital setting facilitates therapeutic contributions from patients' families and support systems. Families are considered important because they are experiencing the crisis with the individual and can play an integral role in facilitating the individual's ability to remain stable in the community. Families contribute in several meaningful ways including: (1) providing the clinician with information on the individual's crisis experience and pattern of illness, (2) offer insight on individuals response to certain intervention approaches, (3) discuss ways in which they can aid in the current crisis resolutions and future situations, (4) participate in group therapy or family counseling sessions, (5) obtain education on mental illness, crisis intervention, (6) be a point of contact for follow-up after the crisis is resolved, and (6) receive support as accompany the individual on their journey back to wellness.

Other bodies of research have criticized crisis intervention teams for removing choice from the consumer by either denying inpatient treatment or making inpatient treatment compulsory. Crisis resolution teams have been accused of being the "gatekeepers" of inpatient care, not allowing individuals who are seeking inpatient care to be treated in an inpatient setting. Some individuals and families prefer to receive treatment in an inpatient setting because of its association with being the most intense treatment level. Some patients value the isolation of inpatient treatment because it helps patients maintain privacy and allows for a better ability to focus on care without distractions from outside world. Others have accused the teams of increasing the rate of compulsory treatment. Those who are considered in need of inpatient treatment are often the sickest of the sick. Individuals likely hospitalized are suffering from disorders such as major depression, psychosis, and illnesses that consider them more likely than others to commit harm to themselves or others. If they refuse treatment, they are often court ordered for involuntary treatment in a psychiatric facility. Crisis teams often take on the role as screeners to determine if a person experiencing a crisis meets the criteria for involuntary admission to an inpatient facility. These teams are usually the first step in developing a court order for compulsory treatment. Many argue that compulsory treatment is a violation of an individual's human rights. Communities with a crisis intervention team express concerns with their approach to screening and ordering involuntary treatment. As explained by researcher Beth A. Stroul (1993), communities struggle with "maintaining the appropriate balance between advocating for consumers' rights and fulfilling the obligation to ensuring their obligation to the community" Compulsory treatment has also been considered an issues for inpatient psychiatric wards.

Research in England has shown that inpatient wards face challenges due to the existence of CRTs. The inpatient wards are seeing an increase in more complex patients admitted involuntarily and uncooperative with treatment (Cotton et al, 2001). This an increase in challenging patients can create a burden on the facility and lead to provider burnout.

Growth of crisis intervention programs in the United States

Crisis intervention teams are spreading throughout the US in various different models. As described above, programs incorporate a number of different combinations of Stroul's essential components of crisis intervention. Communities with well-developed crisis intervention programs—like the Harris County program highlighted above—reported key elements for a crisis intervention program: (1) Twenty-Four-hour availability, (2) hiring and retaining well-trained, multidisciplinary staff, (3) the ability to provide services outside of the traditional setting, and (4) the ability to provide a variety of services to respond to different types of crises.

While there is an abundance of anecdotal and provider-guided evidence on the effectiveness of crisis intervention programs, there is very little research within the United States to support or invalidate it. Most research on crisis intervention programs have been done in the UK and other European countries. Therefore, is important to develop a knowledgebase on the benefits of implementing a crisis intervention program within the US population. Results from this study will add to the literature on the effects of crisis intervention programs within the US population.

The goals of this paper is to inform multiple stakeholders on the effectiveness of the crisis intervention models. Patients and families can learn of the opportunity of a

lower level of care in crisis intervention programs. Consumer advocates can utilize this research to advocate in favor or against the implementation of crisis intervention programs in communities. Hospital leaderships can utilize the data on admissions rates to facilitate deciding whether or not to implement a crisis intervention model within their facilities. Insurance agencies within the United States may be able to use this research on effectiveness to help guide decisions on providing coverage for inpatient treatment versus a lower level of care.

METHODS

In this third chapter, I will discuss the methods I used to determine the difference in hospitalization rates between hospitals that have a crisis intervention program and hospitals that do not. I will describe the survey used to collect data from the participating facilities, explain my research hypothesis, and discuss the statistical and analytical methods I used to test my hypothesis.

Description of 2010 National Mental Health Services Survey (N-MHSS, 2010)

For the purpose of this thesis, I used the 2010 National Mental Health Services Survey (N-MHSS). The 2010 N-MHSS survey instrument was a 10-page document with 36 numbered questions (Appendix A). The survey collected data on the following topics:

- Facility type, operation, and primary treatment focus
- Facility treatment characteristics (e.g., settings of care; mental health treatment approaches, supportive services/practices, and special programs offered; crisis intervention team availability; and seclusion and restraint practices)
- Facility operating characteristics (e.g., age groups accepted; services provided in non-English languages; and smoking policy)
- Facility management characteristics (e.g., computerized functionality; licensure, certification, and accreditation; standard operating procedures; and sources of payment and funding)
- Client demographic characteristics

Quality Assurance

Mathematica staff reported that all mail questionnaires underwent a manual review for consistency and missing data. Calls to facilities clarified questionable responses and obtained missing data. After data entry, automated quality assurance reviews were conducted. The reviews incorporated the rules used in manual editing plus consistency checks not readily identified by manual review. The web-based questionnaire was programmed to be self-editing; that is, respondents were prompted to complete missing responses and to confirm or correct inconsistent responses on critical items. The CATI questionnaire was similarly programmed (N-MHSS, 2010).

Survey universe

The N-MHSS universe initially consisted of 15,562 facilities. The universe included all known specialty mental health facilities in the United States and its territories at the beginning of the data collection period. The 15,562 facilities in the 2010 N-MHSS frame were identified from the National Survey of Mental Health Treatment Facilities (NSMHTF) conducted by SAMHSA in 2008 (N-MHSS, 2010). An additional 634 facilities were identified from a list of currently-operating mental health treatment facilities provided by the Centers for Medicare and Medicaid Services (CMS) and various national professional organizations. These entities provided information for additional mental health facilities that were added to the initial survey frame. The final total N-MHSS facility universe including the NSMHTF data and the additionally identified facilities was 16,197 mental health treatment facilities (N-MHSS, 2010). *Figure I.* below

displays the sources that contributed to the identification of facilities included in the N-MHSS survey universe.

Figure I. **Sources of the N-MHSS Survey Universe**

Data collection

Three data collection modes were employed: a secure web-based questionnaire, a paper questionnaire sent by mail, and a computer-assisted telephone interview (CATI). A data collection packet (including the questionnaire, SAMHSA cover letter, definition package, State-specific letter of support, information on completing the survey on the web, fact sheet of Frequently Asked Questions, and postage-paid business-reply envelope) was mailed to each facility in June 2010 (N-MHSS, 2010). The web-based survey also became available in June. Each facility had the option of completing the paper questionnaire and returning it by mail or completing the questionnaire via the secure survey website. During the data collection phase, personnel from Mathematica Policy Search were available by telephone to answer facilities' questions concerning the survey. Web-based support for facilities completing the questionnaire on the web was also available. Multiple reminder letters were sent to non-respondents over the course of

the data collection period via fax, mail, and email. To increase the survey response rate, State mental health agency representatives were contacted during the data collection period to inform them of their State's progress and to request additional help in encouraging responses. CATI follow-up of non-respondents began in late September 2010 and ended in late December.

Survey coverage

The following types of mental health treatment facilities were included in the 2010 N-MHSS:

- *Psychiatric hospitals*—Facilities licensed and operated as state/public psychiatric hospitals or as state-licensed private psychiatric hospitals that primarily provide 24-hour inpatient care to persons with mental illness. They may also provide 24-hour residential care and/or less than 24-hour care (i.e., outpatient, partial hospitalization), but these additional service settings are not requirements.
- *Non-federal general hospitals with a separate psychiatric unit*—Licensed general hospitals (public or private) that provide inpatient mental health services in separate psychiatric units. These units must have specifically allocated staff and space for the treatment of persons with mental illness. The units may be located in the hospital itself or in a separate building that is owned by the hospital.
- *Outpatient or day treatment or partial hospitalization mental health facilities*—Facilities that (1) provide only outpatient mental health services to ambulatory clients, typically for less than three hours at a single visit or (2) provide only partial day mental health services to ambulatory clients, typically in sessions of

three or more hours on a regular schedule. A psychiatrist generally assumes the medical responsibility for all clients and/or for the direction of their mental health treatment.

- *Residential treatment centers (RTCs) for children*—Facilities not licensed as psychiatric hospitals that primarily provide individually-planned programs of mental health treatment in a residential care setting for children under age 18. (Some RTCs for children may also treat young adults.) RTCs for children must have a clinical program that is directed by a psychiatrist, psychologist, social worker, or psychiatric nurse who has a master's or doctoral degree. To qualify as an RTC, the primary reason for admission of more than half of the clients must be mental illness or emotional disturbance that can be classified by DSM-III/DSM-III-R, DSM-IV/DSM-IV-TR, or ICD-9-CM/ICD-10-CM codes, other than codes for mental retardation, developmental disorders, and substance use disorders.
- *Residential treatment centers (RTCs) for adults*—Facilities not licensed as psychiatric hospitals that primarily provide individually-planned programs of mental health treatment in a residential care setting for adults.
- *Multi-setting (multi-service, non-hospital) mental health facilities*—Facilities that provide residential and outpatient mental health services and are not classified as psychiatric or general hospitals with a separate psychiatric unit or as RTCs.

The 2010 N-MHSS survey universe excluded Department of Defense military treatment facilities, Indian Health Service-administered or tribally-operated facilities, private practitioners or small group practices not licensed as a mental health clinic or

center, and jails or prisons. *Table I.* below displays the number a facilities that are labeled by each facility type outlined in the discussion above.

Table I. **Number of Each Mental Health Facility included in the N-MHSS 2010, N=10,374**		
Facility Type	Number	Percent
Psychiatric hospitals	658	6.3
Non-federal general hospitals with a separate psychiatric unit	1238	11.9
Outpatient or day treatment or partial hospitalization mental health facilities	6468	62.3
Residential treatment centers (RTCs) for children	781	7.5
Residential treatment centers (RTCs) for adults	878	8.5
Multi-setting (multi-service, non-hospital) mental health facilities	351	3.4

Ineligible Facilities

While the data collectors reached out to all of the facilities in the survey universe, not all facilities were included in the survey frame or study. Of the total 16,197 facilities included in the survey frame, 4,011 (24.8 percent) were closed or considered ineligible. Ineligible facilities included those that did not provide mental health treatment, were considered a satellite site—a facility with services provided by staff from another facility and no permanent staff of their own, focused primarily on substance abuse treatment or general health care, provided treatment only for incarcerated persons in jail or prison, or were an individual or small group mental health practice not licensed or certified as a mental health clinic or center. Of those 12,186 facilities considered eligible, 1,068 did not respond to the survey, 693 were excluded, and 51 were considered a part of another

facility. As displayed in *Table II*., the total number of unique mental health facilities with available data is 10,374 (N-MHSS, 2010).

***Table II*. Number and Percentage of Facilities Included in N-MHSS 2010 Survey**		
	Number	**Percent**
Total Facilities in Survey	16,197	100
Ineligible	4,011	24.8
Eligible	12,186	75.2
Total Eligible	12,186	100
Non-respondents	1,068	8.8
Respondents	11,118	91.2
Excluded	693	6.2
Apart of another facility	51	0.5
Total Included	10,374	93.3

Item Non-Response and Data Considerations

As explained by the N-MHSS data collectors, item response rates on the survey averaged 98 percent across all items due to the extensive follow up during the data collection period. (N-MHSS, 2010). However there were some issues noted by the researchers that should be taken into consideration while interpreting the data (N-MHSS, 2010):

- The N-MHSS is a voluntary survey, therefore there was no way to ensure a 100 percent response rate. While the data collectors attempted to obtain responses from all known mental health treatment facilities, the survey still had an 8.8 percent non-response rate.

- The N-MHSS is a point-prevalence survey that requests information on mental health treatment and clients as of a pre-selected reference data, April 10, 2010. Therefore, client counts reported here do not represent annual totals. Rather, the N-MHSS provides a "snapshot" of mental health treatment facilities and clients on an average day or month.
- Multiple responses were allowed for certain questionnaire items. Tabulations of data for these items include the total number of facilities reporting each response category.

Research Hypothesis

I hypothesize that facilities that report operating a crisis intervention program or a psychiatric emergency walk-in service will have a lower number of patients receiving inpatient treatment services than facilities without a crisis intervention program or a psychiatric emergency walk-in service. I further hypothesize that this difference will persist regardless of whether the facility is private or government run.

Variables and Measurement

I conducted a factorial analysis of variance on the data using the IBM SPSS statistical analysis software package. I will discuss each of the variables included in my model below.

Independent Variables

The independent variables selected for this thesis are the existence of a crisis intervention program and the operation of a psychiatric emergency walk in service.

Survey respondents were asked "Does this facility operate a crisis intervention team to handle acute mental health issues?" The respondents were given the following options: Yes, Only within this facility; Yes, only offsite; Yes, both within this facility and offsite. I recoded the crisis intervention team variable to a "yes" or "no" binary variable. *Table III.* shows a total of 1,072 respondents reported that their facility operates a crisis intervention team, 686 reported that they did not, and 129 did not report a valid response.

***Table III*. Responses to the Survey Item "Does this facility operate a crisis intervention team to handle acute mental health issues?"**		
	Number	**Percent**
YES	1072	56.8
NO	686	36.4
MISSING	129	6.8

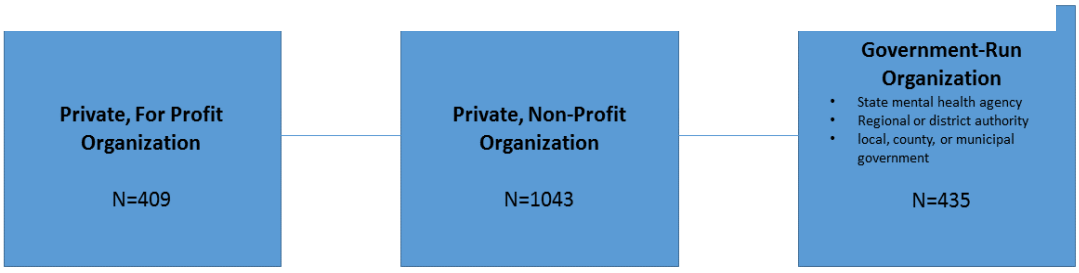
Survey respondents were also given "yes" or "no" options in response to the question whether or not the facility offers psychiatric emergency walk-in services. Table IV shows a total of 1,031 respondents reported that their facilities offer psychiatric emergency walk-in services, 724 reported that they do not, and 132 did not report a valid response.

***Table IV*. Responses to the Survey Item "Does this facility offer psychiatric emergency walk-in services?"**		
	Number	**Percent**
YES	1031	54.6
NO	721	38.4
MISSING	132	7.0

Other factoring variables

Survey respondents were asked the type of organization that operates the facility with the options of (1) private, for profit organization; (2) private, non-profit organization; (3) State mental health agency; (4) State department of corrections or juvenile justice; (5) Regional or district authority; (6) local, county, or municipal government; (7) U.S. Department of Affairs; or (8) other. For the purposes of this analysis, I excluded facilities that were run by the U.S. Department of Veteran Affairs, state department of corrections or juvenile justice organizations and those listed as "other". I recoded this variable to three categories (1) private, for profit organizations, (2) private, non-profit organizations; (3) government run organization. *Figure II.* illustrates how each type of organization was categorized.

***Figure II.* Categorization of recoded variable: Facility Type**



Dependent Variables

The N-MHSS Survey asks respondents for the number of patients that received inpatient treatment on the survey reference date, April 30, 2010. Respondents are then asked to indicate the number and percentage of the total patients receiving inpatient treatment that are receiving voluntary mental health treatment and involuntary mental health treatment.

Sample

As discussed in the description of the survey, of the 16,197 facilities included in the survey frame, 4,011 were either closed or considered ineligible, 1,068 did not respond to the survey, 693 were excluded, and 51 were considered a part of another facility. The total number of unique mental health facilities with available data is 10,374. Of those facilities surveyed, 1,975 facilities reported providing inpatient hospitalization services and 1,887 facilities were run by organizations other than the Department of Veterans affairs and juvenile justice facilities. For the purposes of this study, we will examine the admissions rates of these 1,887 facilities.

FINDINGS

There were two related research questions in this study: (1) identify whether there were differences in number of admissions between inpatient facilities that reported operating a crisis intervention team and those that did not, and (2) identify whether there were differences in the number of admissions between inpatient facilities that reported having psychiatric emergency walk-in services and those that did not. In this chapter, I will outline the results from factorial analyses of variance to address each research question.

Differences between facilities implementing crisis intervention teams

Survey respondents were asked "Does this facility operate a crisis intervention team to handle acute mental health issues?" A total of 1,072 respondents reported that their facility operated a crisis intervention team while 686 reported that they did not. A factorial analysis of variance shows a significant difference between facilities that operate a crisis intervention team and those that do not $F(2,1858)=3.63$, $p=.027$). Facilities that operate a crisis intervention team reported more patients that received inpatient care on the reference date ($M=62.36$, $SE=2.94$) than facilities that reported that they did not operate a crisis intervention team ($M=58.96$, $SE=3.64$).

The ANOVA also shows a significant interaction between the existence of a crisis intervention team and organization type $F(4,1858)=3.52$, $p=.007$ (*Table V.*). Private, for profit facilities with crisis intervention teams reported more patients on average received inpatient care on the reference date ($M=48.85$, $SE=5.49$) than private, for profit facilities without crisis intervention teams ($M=33.30$, $SE=7.82$). Similarly, private, non-profit

facilities with crisis intervention teams reported teams reported more patients on average received inpatient care on the reference date (M=32.69, SE=3.53) than private, non-profit facilities without crisis intervention teams (M=26.76, SE=4.53). Government run facilities had the opposite trend. Government run facilities with crisis intervention teams reported on average, less patients that received inpatient care on the reference date (M=105.54, SE=5.91) than government run facilities without crisis intervention teams (M=116.82, SE=6.13).

***Table V*. Mean number of patients receiving inpatient treatment on reference data, April 30, 2010 by existence of crisis intervention service and organization type**

	Private, for profit organization	**Private, non-profit organization**	**Government run organization**
Yes	M=48.85, n=247	M=32.69, n=597	M=105.54, n=213
No	M=33.30, n=122	M=26.76, n=363	M=116.82, n=198

Differences between facilities implementing psychiatric emergency walk-in services

Survey respondents were given "yes" or "no" options in response to the question whether or not the facility offers psychiatric emergency walk-in services. A total of 1,031 respondents reported that their facilities offered psychiatric emergency walk-in services while 724 reported that they did not. A factorial analysis of variance shows a significant difference between facilities that offer psychiatric emergency walk-in services and facilities that do not $F(1,1731)=23.65$, $p=.000$. Facilities that offer psychiatric emergency walk-in services reported less patients that received inpatient care on the reference date (M=47.23, SE=3.10) and facilities that do not offer psychiatric emergency walk-in services (M=69.85, SE=3.50).

The ANOVA also shows a significant interaction between the existence of a psychiatric emergency walk-in service and organization type F(2, 1731)=55.65, p=.000. Private, for profit facilities that offer psychiatric emergency walk-in services reported more patients on average received inpatient care on the reference date (M=52.00, SE=5.62) than private, for profit facilities that do not offer psychiatric emergency walk-in services (M=29.36, SE=7.50). Similarly, private, non-profit facilities that offer psychiatric emergency walk-in services reported teams reported more patients on average received inpatient care on the reference date (M=31.80, SE=3.50) than private, non-profit facilities that do not offer psychiatric emergency walk-in services (M=28.28, SE=4.61). Government run facilities that offer psychiatric emergency walk-in services reported on average, less patients that received inpatient care on the reference date (M=57.91, SE=6.64) than government run facilities that do not offer psychiatric emergency walk-in services (M=151.90, SE=5.65). This is similar to the examination of facilities that operate crisis intervention programs. Government run facilities that offer psychiatric emergency walk-in services had the opposite trend in number of patients receiving inpatient care than private run facilities that offer psychiatric emergency walk-in services.

***Table VI*. Mean number of patients receiving inpatient treatment on reference data, April 30, 2010 by existence of psychiatric emergency walk-in service and organization type**

	Private, for profit organization	**Private, non-profit organization**	**Government run organization**
Yes	M=52.00, n=235	M=31.80, n=609	M=57.91, n=179
No	M=29.36, n=132	M=28.28, n=349	M=151.90, n=233

DISCUSSION

This paper examined the differences in number of admissions between inpatient facilities that reported operating a crisis intervention team and those that did not and the differences in number of admissions between inpatient facilities that reported having psychiatric emergency walk-in services and those that did not. Analysis of the data from a national sample of 1,887 inpatient psychiatric facilities from the National Mental Health Services Survey show that private-run psychiatric facilities that operate a CIT or psychiatric emergency walk-in service reported more patients receiving inpatient care than facilities that reported they did not while government-run facilities that operate a CIT or walk-in service reported less patients than facilities that reported no CIT or walk-in service. In this chapter, I will discuss the findings, limitations of this study, and implications for further research.

I found a significant difference between facilities that operate a crisis intervention team and those that do not. Facilities that operate a crisis intervention team reported more patients that received inpatient care than facilities that reported that they did not operate a crisis intervention team. This was not consistent with previous findings that showed CITs were effective in lowering admission rates in hospitals (Hasselberg et al, 2013). Furthermore, this adds to the continued conflicts in the literature around the effectiveness of CITs.

I noticed some interesting findings when considering the type of facility implementing crisis intervention programs. Private hospitals with crisis intervention teams reported more patients than private hospitals without crisis intervention teams. This follows the trend discussed above where crisis intervention programs appear to be

implemented in hospitals that are admitting more patients. Government-run, or public hospitals had the opposite trend and had less patients receiving inpatient care. While these findings are interesting, they were not surprising. Private hospitals typically survive financially by maintaining a full facility. Thus the incentive to admit patients may be great enough that they do not divert many patients that encounter the CIT services. Public hospitals, on the other hand, have been trending towards decreasing their beds and keeping patients in the community. Therefore, these facilities may be utilizing the CIT services for their purpose, diverting patients from inpatient admission.

The conflicting evidence on the crisis intervention programs may show that facilities are using them for their own purposes. Some facilities may be using the CIT to decrease their admissions, while other are using it as a pipeline for inpatient admission. This aligns with previous literature that showed CITs were effective in decreasing inpatient admissions (Hasselberg et al, 2013), had no effect on inpatient admissions (Jacobs & Barrenho, 2011), produced an increase in involuntary admissions (Tyler et al, 2010). It is worth examining the intentions of facilities that implement CIT programs.

Also, the variety in facilities implementation of a crisis intervention program may be related to the conflicting evidence in their ability to lessen inpatient psychiatric hospitalization rates. Stroul (1993) outlined several features of crisis intervention programs with the understanding that facilities tailor their models to fit their needs and resources. Allen and colleagues (2002) further elaborates on this point and describes the lack of standards in psychiatric emergency services.

Psychiatric emergency services are unpredictable from facility to facility and hour to hour within the same facility. A wide range of assessment from focal screening to

comprehensive assessment is offered in different settings. The scope of care similarly ranges from emergency medication and supportive counseling to intensive care (Allen et al, 2002).

While it is important to know if crisis intervention programs are effective, it is also important to understand which aspects are key elements of effectiveness. Further research should be conducted to determine the characteristics of a crisis model to be successful within different implementation settings.

While the findings of this research are certainly interesting and worth exploration, some limitations should be considered. The survey asks respondents to answer questions according to a reference date. Thus, the number of people admitted to the hospital was based on one point in time. Analysis using a time period pre and post implementation of a CIT would provide a better depiction of the effectiveness of the CIT. Also, due to the variety of CIT models that exists, respondents were not given a clear definition when asked if they implemented crisis interventions services. They, instead were expected to use their own interpretation based on the model they were implementing. This may have led a variety of CIT with no real standards set. Continued research should highlight features of CITs that are most effective in decrease the rate of inpatient psychiatric admissions. This paper attempted that goal by examining the difference in number of inpatient psychiatric admission between facilities that offer a key element of CITs, psychiatric emergency walk-in services and facilities that do not. Yet, the research found a similar trend: private hospitals with walk-in services had more admissions, than private hospitals that did not; Public hospitals with walk-in services had less admission than public hospitals that did not.

The wide-ranging evidence of the effectiveness of crisis intervention programs shows that this is an area of mental health services needs continued investigation. While there is anecdotal evidence and advocacy around crisis intervention, this should be priority in research. There is no clear evidence on effectiveness, yet there is widespread implementation. Conducting this research, I discovered that there are not many datasets available that even have crisis intervention programs as a variable. Therefore, the room for future research on CIT models and their implications for inpatient psychiatric admissions.

CONCLUSION

Facilities that operate crisis intervention services differ in the rate of inpatient treatment from facilities that do not operate those services. This difference, however is antithetical between private and public run facilities. Private facilities that offer crisis intervention services had more admitted patients than facilities without crisis services while government-run facilities with crisis services had less admitted patients than those without crisis services. This difference, while surprising, suggest an influence on facility type on number of admitted patients.

One could consider the motivation for crisis intervention programs for the different facility types. Private facilities may utilize these services as a gateway to inpatient treatment as they typically stay in business by keeping individuals in an inpatient setting. Government run facilities, on the contrary, may use them for gatekeeping as they are following the trend of deinstutionalization. In either case, there is a clear difference in the number of admitted patients. In order to fully assess the

effectiveness of crisis intervention programs, further investigation should first consider the intention of the programs within facilities implementing them.

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APPENDIX