ISSUES OF MENTAL HEALTH AND SERVICE USE IN A SAMPLE OF CHILDREN IN LONG-TERM FOSTER CARE

by

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ABSTRACT

Research strongly suggests that children in foster care exhibit higher rates of mental disorders compared to children in the general population and while they tend to receive more services, many still do not receive the care they need. The present study seeks to compliment the existing body of research on mental health in foster children. The study is based on a secondary data analysis of the National Survey for Child and Adolescent Well-being. The purpose of this study was to explore the relationship between two indicators of emotional wellbeing, externalizing symptoms and mental health service use using the Long-Term Foster Care sample. Two indicators of emotional wellbeing—depression and trauma symptoms, along with externalizing symptoms were first examined to determine if a sufficient proportion of the sample fell within clinical range on these measures. Due to an insufficient subsample of children who fell within this range, these outcomes could not be related to service use. A follow-up analysis was conducted that examined the externalizing and internalizing subscales of the Child Behavior Checklist (CBCL) and their relation to service use. Significant relationships were found between those children who had a single diagnosis of either or externalizing or internalizing disorders, and those who had a dual diagnosis. Those children with a dual diagnosis tended to receive the most services. Implications and areas for future research are discussed.
Chapter 1

INTRODUCTION

In 2013, over 600,000 children and youth were served by foster care (Administration of Children, Youth, and Families, 2014). Children and youth in out of home care are at increased risk for mental health challenges compared to their peers. While 22% of children have a mental health diagnosis in the general population (Roberts et al., 1998), that percentage jumps to 80% for children in foster care (Simms et al., 2000). In another study comparing foster children to children who received Supplemental Security Income, the rate of mental health disorders was still significantly greater within the foster care subsample (57% compared to 26%) (dosReis et al., 2001). Furthermore, compared to children receiving any type of aide, those in foster care were 15 times more likely to have a mental health disorder (dosReis et al., 2001). These high prevalence rates could be partially attributed to the fact that children in foster care are assessed at a much higher rate compared to children in the general population, but regardless these statistics demand a call to action on the part of researchers and other child welfare stakeholders.

Numerous antecedent and co-occurring factors can contribute to poor mental health among children/youth in foster care. Children are often removed from their home of origin either because of caregiver neglect/abuse or behavior problems and a vast body of empirical literature demonstrates a strong relation between caregiver
maltreatment and subsequent behavioral or emotional issues (Afifi, McMillen, Asmundson, Pietrizak, & Sareen, 2011; Bender, 2008; Jackson, Gabrielli, Fleming, Tunno, & Makanui, 2014; Lenneke, Cicchetti, Jungmeen, & Rogosch, 2012).

Children in out-of-home care are also much more likely to come from impoverished homes and have biological parents who have been incarcerated and have low educational attainment and/or mental health or substance abuse issues (Phillips & Dettlaff, 2009). These parent characteristics also tend to be positively associated with increased rates of child neglect and abuse (Semidei, Radel, & Nolan, 2001), which in turn increase the likelihood for developing emotional or behavioral problems (Van de Mark et al., 2005). Thus a disproportionate number of children enter care at a major disadvantage relative to their peers due to the increased likelihood of their experiencing some form of trauma or instability in their home environment.

Removal from their home of origin often serves as a secondary trauma for the children as they are taken away from familiar adults and siblings at a time when they are most vulnerable. They are often not provided with a sufficient explanation for removal or with a reliable estimate of when they may return home (Hyde & Kammerer, 2009). Because there are more children than available foster homes (Reifsteck, 2005), children are often placed into a home with several other children or into a congregate care or restrictive care setting. There is also evidence suggesting that many foster homes provide low quality care in understimulating environments (Barth et al., 2008). Research into group care facilities suggests that these facilities tend to provide a lower quality of care compared to family foster homes (James,
Landsverk, Leslie, Slyman, & Zhang, 2008). There is often a high child-to-caregiver ratio and less continuity in care due to the typical shift schedule of group home counselors (James et al., 2008). To deal with a shortage of foster homes, children with low level problems are often arbitrarily placed into a restrictive care setting as a kind of holding pen until homes become available (Barth, Wildfire, & Green, 2006; Hyde & Kammerer, 2009).

Instability in care is one of the most important variables affecting the wellbeing of children in care (Barth et al., 2007). Many children cycle through multiple placements, especially those who enter care at age 11 or older (Havlicek, 2011). From their study of foster children in California (N = 19,351), Fawley-King and Snowden (2012) found a bidirectional relationship between the use of emergency room, inpatient psychiatric services and placement change. This study suggests that change in care settings functions as a major stressor for these children. Aside from a change in caregiver, when a child is moved to another foster home it often means a change in their school, neighborhood, peer group, caseworker and health providers as well, forcing the child to establish a host of new relationships. Some studies suggest that poor coordination of care between child welfare stakeholders results in some of the child’s needs falling through cracks in the system (Collins & Clay, 2009). This is particularly true when it comes to the coordination of their physical and mental healthcare (Friedman, Reifel, Reed, & Cloud, 2014). Poor coordination of care may impact the relationship found between placement instability and behavior problems as well (Barth et al., 2007; Rubin, O’Reilly, Luan, & Localio, 2007).
Children in foster care represent a unique group of children with complex histories and needs. While there is a substantial body of research on mental health outcomes and service use of children in foster care, there are still questions left unanswered which limit a more nuanced understanding of the issues. Much of the past literature has focused on overt behavioral health outcomes while neglecting other subtler emotional and socioemotional disturbances. As a result, we know little of how a child’s emotional wellbeing is related to the presence or absence of behavioral disorder. Mental health has come to be equated with behavioral health, while the latter is really only a dimension of the former, which is best described as encompassing psychological and emotional health along with behavioral health.
Recent years have witnessed a gradual departure from the traditional deficit-orientated medical model that defines health as the absence of a disorder to one that includes the presence of wellness. Mental health encompasses domains of wellness (emotional, psychological, and social) all of which impact how we think, feel, and act (U.S. Department of Health and Human Services, 2015). The presence of mental health allows us to positively adapt to normal life stressors, be productive in our own lives and contribute to the larger community (World Health Organization, 2004). The natural corollary to mental wellness is mental disorder, defined by the DSMIV as a behavioral or psychological disorder of clinical significance marked by current distress, impairment of functioning or with a “significantly increased risk of suffering death, pain, disability, or an important loss of freedom” (Stein et al., 2010, p. 1). Regardless of origin, it is interpreted as a manifestation of dysfunction within the individual. A mental health disorder is distinct from culturally normative responses to specific events, such as strong emotional reactions to like the loss of a loved one. Culturally normative responses to specific events fall outside the definition of mental disorder.

For children and adolescents in particular, key components of mental health include “a sense of identity and self-worth, sound family and peer relationships, an
ability to be productive and to learn, and a capacity to tackle developmental challenges and use cultural resources to maximize growth” (World Health Organization, 2005).

The key component of the mental health framework that will be applied in the present study makes a distinction between internal and external disorders of mental health. Internalizing disorders are herein defined as the tendency to “express distress inwards” (p. 109) often in the form of mood or anxiety disorders (Cosgrove et al., 2011). Mood disorders include major depressive disorder or a dysthymic disorder. Children with internalizing disorders tend to have high levels of effortful control, are more vulnerable to episodes of sadness and are typically less impulsive (Tandon, Cardeli, & Luby, 2009).

Externalizing disorders are defined as the tendency to “express distress outwards” (p. 109) in the form of attention deficit/hyperactivity disorder, conduct disorder, or substance use disorder (Cosgrove et al., 2011). Children with externalizing disorders tend to have low levels of effortful control (Tandon, Cardeli, & Luby, 2009).

Within the present framework, external symptoms are considered manifestations of an internal emotional or cognitive mental state. The purpose of this distinction is to switch the attention from observable mental health issues to internal thoughts and feelings that are not as easily recognizable. Children and youth are usually not brought in for evaluation and referred for services until after they have begun exhibiting external signs of psychological distress, making their issues more difficult to treat and certainly to prevent. The tendency to delay evaluation is partially attributable to the difficulty in assessing internalizing symptoms, especially in younger
children who have yet to develop the verbal ability necessary to express their emotional states. For this reason, the American Academy of Child and Adolescent Psychiatry Work Group (RDC-PA) suggested using “behavioral observations of withdrawal in social situations” (Tandon et al., 2009, p. 2) for this age group instead of self-expressed anxiety (Warren, Umylny, & Aron, 2006).

It is crucial that child welfare stakeholders, those in a research or clinical setting, pay greater attention to the more covert symptoms of early distress to prevent compounding maladaptive emotional, cognitive, or behavioral patterns and their consequent pathologies. This focus on early symptoms is the impetus for including other measures of emotional wellbeing in addition to the Child Behavior Check List (CBCL). Additional attention toward thoughts and emotions along with overt behaviors will provide a more complete picture of the mental health of the present study sample and allow for the comparison of mental health service receipt between exhibiting clinical behavioral issues and those who are behaving typically but exhibiting symptoms of internal distress.
Chapter 3

LITERATURE REVIEW

Prevalence of Mental Health Issues Among Children in Foster Care

Children in foster care suffer from mental health or behavioral disorders at much higher rates than the general population including those in child welfare receiving in-home services. Halfon, Berkowitz, and Klee (1992) provide a broad overview of behavioral and mental health disorders from their study on mental health utilization of foster children in California. Children in this sample could be categorized into 1 of 4 diagnoses: “adjustment disorders (28.6%); conduct disorders (20.5%); anxiety disorders (13.8%); and emotional disorders (11.9%)” (as cited in Friedman et al., 2014, p. 67). The likelihood of having one of these diagnoses was also positively associated with age.

Many studies have assessed the prevalence of formal clinical diagnoses from Medicaid claims data or by directly assessing symptoms that meet specific criteria for a DSMIV diagnosis. From an analysis of MassHealth claims data, Hacker et al. (2014) found that foster care status was associated with a positive behavioral health screening. Becker, Jordan, & Larsen (2007) used ICD-9 codes to determine the distribution of mental health diagnoses for children in foster care in the state of Florida. ADHD, other disruptive disorder, or “other” were the most common
diagnoses within their sample (N = 7,807). Using data from the Rhode Island Children’s Information System (RICHST) from 1998-2002, Connell, Katz, Saunders, and Tebes (2006) report that 10.6% (626) of the total sample had a mental health diagnosis and 25.2% (1490) of children were removed from home primarily because of behavioral problems. Child behavioral problems are a commonly cited reason for why children are initially placed into out-of-home care.

Several studies have used the Child Behavior Checklist (CBCL) to assess internalizing and externalizing behaviors (Heflinger, Simpkins, & Combs-Orme, 2000; James et al., 2008; Keller et al., 2001). In the study conducted by Heflinger et al. (2000), 34% of their sample had behavior problems as measured by the CBCL (N = 311). Twenty-three percent were in the clinical range for externalizing disorders, while another 19% fell within the clinical range for internalizing disorders. In a similar finding, 25.4% of the sample from a study by Keller et al. (2001) were in the borderline clinical range for externalizing disorders, and 17.9% for internalizing disorders (N = 240). A smaller percentage fell within the clinical range (16.4% and 11.9% respectively). From research conducted by James et al. (2008), 50.4% of their sample had borderline scores on the CBCL (N = 570). (For a summary of studies prior to 2000 that have assessed samples of foster children using the CBCL, refer to Heflinger, et al., 2000; Keller et al., 2001).

The findings from the study by Whitted et al. (2012), which used the Strengths and Difficulties Questionnaire (SDQ), lends further support to the aforementioned studies that used the CBCL while also contributing to our knowledge of emotional
issues within this population. Of the 670 participants who ranged in age from 3-11 years of age, 57.5% scored in the borderline or abnormal range on the emotional symptoms subscale. For the total score, which included emotional symptoms, conduct, hyperactivity, peer problems, and prosocial behavior 81.2% of the participants scored in the borderline to abnormal range. Ninety percent of the children scored in the borderline to abnormal range on at least one of the 4 subscales.

The National Survey of America’s Families (NSAF; rounds 1997 and 1999) adds a more nuanced perspective by distinguishing between emotional or behavioral wellbeing and mental health (N = 819). A 6-item measure of emotional wellbeing was created from questions asking parents to report the extent to which their child was unhappy, sad, or depressed. For children aged 6-11, parents were also asked “how often during the past month their children felt worthless or inferior; were nervous, high-strung, or tense; or acted too young for their age” (NSAF Questionnaire, 1999). From a secondary data analysis by the Urban Institute, it was found that 27% of children ages 6-11 had an emotional or behavioral problem, while 28% had a limiting mental health condition (Kortenkamp & Ehrle, 2002).

The high incidence of mental health issues found within this sample of children in middle childhood supports the collection of data suggesting that age is positively associated emotional and behavioral problems. Of youth in foster care, the highest rates of mental health disorders tend to be found within older youth in care (Farmer et al., 2010; Shook et al., 2013). Foster youth who experience their first out-of-home placement in mid to late adolescence are more likely to have been removed
from home due to behavioral issues compared to younger children (Barth et al., 2006; Simmel, 2010). Older adolescents in care are also more likely to have spent several years in care, to have experienced greater placement instability and to have been placed into congregate care settings (Havlicek, 2011; Kids Count, 2011). These profile characteristics tend to be associated with poorer emotional and behavioral health outcomes. A systematic review of 16 studies on mental health issues of youth transitioning from care by Garcia and Smith (2013) suggests that by age 17 or 18 youth are 2-4 times more likely to have had a mental health disorder in their life-time and in the past year. Of the studies in their review, the proportion of youth with a mental health diagnosis ranged from 37%-66%. Rates of major depression ranged from 10%-32%.

**Mental Health Services Use by Children in Care**

There is a broad range of mental health services available to children in foster care that can be roughly divided into outpatient services, school-based services, and inpatient services. In-Home Family Services involves methods of parent-child intervention with the goal of maintaining family placement in-home family services (Reifsteck, 2005). Specific activities might include therapy, referrals, education or case coordination. Outpatient services refer to community mental health centers, outpatient drug and alcohol services, individualized case management, or individual or family counseling by private professionals like psychologists or psychiatrists. There are treatment options available within the school setting as well in the form of school-
based psychologists and social workers or guidance counselors. Finally, inpatient services, such as congregate care placement settings such as Multidimensional Treatment Foster Care (MTFC), Residential Treatment programs, therapeutic foster homes, include more intensive activities and are typically more restrictive (Barth, 2004). The MTFC model is a multifaceted intervention developed in 1983 by Patricia Chamberlain and targets those children and adolescents with severe mental health issues. Therapeutic foster homes were first designed in the 1960s as an alternative or supplement to long-term stays in residential treatment programs (Reifsteck, 2005). Inpatient services also include psychiatric hospitalization. Several studies show that families typically receive multiple modalities of service after the child has entered foster care (Chamberlain, 1990) making proper oversight and coordination of care by the child’s caseworker critical to ensuring good outcomes (Reifsteck, 2005).

There is a wealth of data reporting high rates of mental health service use among children in foster care. Compared to the general population of children, foster children are 15 times more likely to receive services and, although they comprise only 4% of children eligible for services they represent 41% of publicly funded mental health service users (Halfon, Berkowitz, & Klee, 1992). A substantial percentage of children in care do not receive adequate preventive care in the form of well visits, which could partially explain their higher use of treatment services (Kortenkamp & Ehrle, 2002). Of the participants in the NSAF (1997 and 1999), 27% of children 0-5 had not received a well visit in the past year (Kortenkamp & Ehrle, 2002). For children aged 12 to 18 this percentage escalates to 40%. This lack of preventive care
could also be partially due to the fact that 16% of this sample did not have health insurance.

Despite these relatively high rates of service use, much of the research suggests that many children with serious mental health issues are not receiving or are not appropriately matched with the care that they need (Kortenkamp & Ehrle, 2002; Leathers et al., 2009, Reifsteck, 2005). From their secondary analysis on the National Study for Child and Adolescent Wellbeing (NSCAW), Burns et al. (2004) found that of those children in Child Protective Services with serious mental health needs, only 24% received services in the past 12 months. In a similar finding from the NSAF, 32% of children with severe emotional or behavioral needs received no services (Kortenkamp & Ehrle, 2002).

Those children and youth who are successfully gaining access to services are utilizing from a wide range of inpatient and outpatient mental health options to meet their varied needs. The review of past studies by Havlicek et al. (2012) suggest that rates of service use by type are greatly varied, which might be partially attributed to differences in study methodology. Lifetime rates of individual counseling ranged from 71%-78% with past year rates ranging from 10-78%. Past year rates of utilization of any mental health service ranged from 19%-83% and past year rates of medication for emotional problems ranged from 11.8-37%. Regional data collected on Medicaid claims gives a significantly higher estimate of psychotropic medication use between 37-52% (Ferguson, Glesener, & Raschick, 2006; Kansas Health Policy Authority, 2008; Office of Texas Comptroller, 2006 as cited in Mackie et al., 2011).
Brenner et al. (2014) likewise found that 59% (N = 240) of their Treatment Foster Care sample was being treated for a mental health condition via psychoactive medications. Of this subgroup, 61% were on two or more medications and 22% met the qualifications for “questionable polypharmacy”, meaning that they were being actively prescribed “2 or more medications within the same class and/or three or more medications” (Brenner et al., 2014).

One study conducted by Reifsteck (2005) sampled 208 children in foster care comparing their scores on The Child and Adolescent Functional Assessment Scale (CAFAS) to different types of mental health services. Foster care was considered a type of service use in this analysis. Ninety-six percent of the sample exhibited severe impairment of functioning based on their CAFAS score. Approximately three fifths of the sample was receiving foster care (20%), therapeutic foster care (20%) or in-home family services (19%). Another 29% were receiving care in a residential treatment center while a small proportion of youth (12%) received psychiatric hospitalization. Those who had received therapeutic foster care, residential treatment, and psychiatric hospitalization had the highest CAFAS score.

Research also suggests that the use of crisis services like visits to the ER or psychiatric hospitalization are related to transitions while in care (Fawley-King & Snowden, 2012). An analysis of 19,351 children in California revealed a bidirectional relationship between placement change and use of emergent services. This finding suggests that foster care can present major stressors that increase the need for
psychological services and that significant emotional or behavioral problems, represented by the use of clinical services, is related to removal from the foster home.

**Justification for the Present Analysis**

Past research has amassed more than a sufficient amount of evidence illustrating that foster children represent one of the most fragile and needy segments of the population. Whether their outcomes are framed in terms of psychological wellbeing, mental, emotional, or behavioral health, there is no doubt that many of them suffer with internal struggles at a much higher rate than the general population. However, there tends to be a bias across both clinical and research settings in favor of external representations of the internal experience. This bias may be partially attributed to the negative stigma that still exists toward mental health in general (World Health Organization, 2005). It may be more palatable to focus on behavioral symptoms and reframe the problem as a behavioral disorder that can be resolved through conditioning.

But our failure to address the cause of a behavioral disorder and identify the initial signs of distress often results instead in the treatment of secondary or tertiary symptoms. Emotional maltreatment is likely to be one of the most direct causes of emotional disturbances. Considering the rise in allegations of this type, it has become increasingly important to turn our attention toward this area of mental health (English, Thompson, White, & Wilson, 2015). An analysis of the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) revealed that 36% of the cases (N = 846) included
allegations of emotional maltreatment (English et al., 2015). Furthermore, the presence of maltreatment was positively associated with trauma symptoms as captured by the Trauma Symptom Inventory (TSI) arguing for a close association between emotional maltreatment and emotional dysfunction.

The difficulty with assessing an individual’s emotional experiences and thoughts is that they are not readily observable and can be easily missed or misinterpreted by others. Self-report data provides a more direct assessment of the internal experience by precluding the additional layer of interpretation brought on by an outside observer, who can only know the outward expression of another’s thoughts and emotion. Thus, self-reporting carries with it a unique benefit from secondary reporting. A previous analysis of the NSCAW’s Long-term Foster Care (LTFC) sample has used the caregiver report form of the CBCL to compare health care need to service use (Leslie, Hurlburt, Landsverk, Barth, & Slymen, 2004).

The present study seeks to complement and extend these findings by using the Youth Self-Report from the NSCAW LTFC sample. The present analysis also differentiates itself from the aforementioned study by including a more in depth exploration of emotional wellbeing. More studies that include in depth measures of emotional and psychological wellbeing are needed in order to expand our knowledge base on children’s perspective. Research has shown that children as young as 7 or 8 can be reliable reporters of their own mental health status (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000; Sharp, Goodyer, & Croudace, 2006). This study will include two indicators of emotional wellbeing - level of post-traumatic stress.
symptoms and symptoms of depression. The addition of these measures will also allow for a comparison between emotional wellbeing and behavioral disorders as captured by the CBCL. These measures will provide preliminary insight into how internal symptoms of distress are related to external behaviors, thereby giving a more nuanced depiction of overall mental health. A more comprehensive understanding of foster children’s mental health will further allow researchers to examine the service use of those children who do not necessarily have a behavioral disorder but are otherwise struggling. In other words it will aid us in identifying those children who are flying under the radar but who will most likely exhibit signs of maladaptation in the absence of early detection and treatment.

This study will contribute to the existing body of literature evaluating the impact of recent policy and legislation that has been put in place to support children and families in the welfare system. Legislative acts of particular relevance include the Adoption Assistance and Child Welfare act of 1980 (P.L. 96-272) that is meant “to strengthen the program of foster care assistance for needy and dependent children, to improve the child welfare, [and] social services” and the Comprehensive Services Act for At Risk Youth and Families of 1992 (P.L. 2.2-5200) that “provided guidelines, authorization and reporting procedures in cases of mandated and non-mandated (preventative) foster care. This study aims to contribute to policy research through the analysis of the following research questions.
**Research Questions**

1) What proportion of children with a behavioral disorder, as measured by the CBCL, evidence poor emotional well-being, as measured by the TSCC and CDI?

2) To what degree is emotional well-being, as assessed by the TSCC and CDI, related to receipt of mental health services, after controlling for the presence of behavioral disorders?

**Hypotheses**

1) Children will fall into 1 of 4 groups based on their mental health scores:
   - Group 1: Borderline/clinical on CBCL and clinical TSCC/CDI
   - Group 2: Borderline/clinical on CBCL and normal TSCC/CDI
   - Group 3: Normal CBCL and clinical TSCC/CDI
   - Group 4: Normal CBCL and normal TSCC/CDI

2) Children with low emotional wellbeing but who score within the normal range externalizing disorders would be receiving fewer services than those in the clinical range for externalizing disorders.
Chapter 4

METHODOLOGY

Data Set and Sampling Framework

The National Survey of Child and Adolescent Wellbeing (NSCAW) was authorized under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 (PUBLIC LAW 104–193). NSCAW is the first longitudinal national study of its kind and was designed in order to learn more about the experiences of children and families involved in the child welfare system. It used a two-stage stratified sample design to select participants. In stage one, the United States was divided in 9 sampling strata encompassing the 8 largest states, plus the remaining states and the District of Columbia. Primary sampling units (PSUs) were defined either as counties or specific child welfare agencies and were randomly selected from within each of the 9 strata. Children were randomly selected from within the PSUs.

To be eligible for selection into NSCAW, children had to fall between the ages of 0-14 at the time of sampling and had to have been in contact with the child welfare system at any time during a 15-month period spanning from December of 1999 to February of 2000.

A subsample of children was selected who had been in out-of-home care for an average of 12 months at the time the sampling frame was produced. This subset of
children comprised the One Year in Foster Care (OYFC) sample and was selected to approximate the general population of children in long-term care. Children’s placement into out-of-home care had to be precipitated reports of suspected neglect or abuse of after a period of in-home services. To reduce the burden on the caregiver, only 1 child was selected per household. In order to select children who had been in out-of-home care for a minimum of 8 months at baseline data collection, the period of eligibility for the OYFC ranged from December of 1998 to February of 1999. For some of the PSUs, there were an insufficient number of children who fell within this 15-month time frame, so it was extended to July of 1998. Thus the total amount of time children had spent in care at baseline ranged from 8 to 18 months.

1,291 children were selected as part of the OYFC sample. From this total, 727 caregivers completed the interview. The remaining cases included 291 ineligibles (23%) (child did not fall within the age requirements, had a sibling in the study, or was deceased), 90 (9%) declined participation, 16 (2%) could not be located, and 141 could not be successfully contacted after multiple attempts or because the sample goal had already been obtained and data collection therefore completed. At the time of baseline data collection 19.1% had already returned home to their biological parent(s). The age restrictions on the measures resulted in final sample sizes of 185 for the analysis of the CDI, 188 for the analysis of the TSCC and 254 for the follow-up analysis. Because an equal number of children had to be selected from each PSU, children had an unequal probability of being selected into the study. Thus sampling weights were used to correct for this unequal probability and account for both the PSU
selection probability and the probability of the child within the sampling time frame being selected for the sample. The sampling weight for the OYFC sample is a product of the PSU weight, also defined as the first-stage weight, and the child weight, or second stage weight. The general release data set was used for the present study, which does not include state-level weights or stratum identifiers and, therefore inferences could only be made at the national level.

**Procedures**

After the final sample had been selected, field representatives contacted the caregivers and asked for permission to interview them and their children. Data was entered directly into a computer by field representatives at the time of collection.

**Measures**

*Behavior Issues*

Behavioral issues were assessed via caregiver report using the Child Behavior Checklist (CBCL-YSR) (Achenbach, 1991). The CBCL has been used in numerous studies to measure externalizing and internalizing behavior problems, as well as emotional problems and social competence. Repeated psychometric testing that has used large standardized populations has demonstrated high levels of internal consistency and validity has been established. The CBCL has been applied to child welfare populations as well (Bellamy, Gopalan, & Traube 2010; Keller et al., 2001). For NSCAW, the CBCL-YSR for ages 11-18 was used and consisted of 118 items.
The CBCL produces three standardized scores: One for internalizing behavior, one for externalizing behavior, and a total problems score. Standardized scale scores of less than 60 on the three subscales are considered within the normal range, and scores above 64 are considered within the clinical range. A binary categorization will be used for the CBCL scores (clinical or nonclinical).

**Depression**

Depression was assessed via the Child Depression Inventory (Kovacs, 1992), a 27-item self-rated measure of depression symptoms for children ages 7 and older. It has demonstrated good internal consistency. Total scores are based on a normative sample of 1,266 children and calculated based on age (7-12 or 13-17) and gender. A T-score of 50 is considered average and a score of 65 or above indicates possible clinical depression. A binary categorization will be used for depression scores (average or possible clinical depression).

**Trauma Symptoms**

Trauma symptoms were assessed using the Trauma Symptoms Checklist for Children (Briere, 1989). The TSCC was developed to measure symptoms of posttraumatic stress and related psychological symptoms in children ages 8-16 who have experienced traumatic events. The items consist of thoughts, feelings, or behaviors and the child is asked to mark how often each one occurs using a 4-point scale from 0 = "never" to 3 = "almost all the time"). This measure was standardized
on a sample of 3,008 children from nonclinical and was shown to have good internal consistency and reliability.

*Use of Mental Health Services*

Mental health service use was going to be originally assessed using an adapted version of the Child and Adolescent Service Assessment (CASA) (Burns, Angold, & Costello, 1992). The CASA collected information on a wide variety of both inpatient and outpatient services used for emotional, behavioral, learning or attention problems. The measure of service use that was applied in the follow-up analysis asked for the total number of mental health services the child was currently receiving. Caregivers could choose between 1 and 10 services.
Chapter 5

DATA ANALYSIS

Research question 1 was addressed using frequency analyses and cross-tabulation analysis. First, frequency analyses were used to determine the overall prevalence of behavioral problems and poor emotional wellbeing. Then cross-tabulations were used to determine the extent to which children identified with behavioral problems also evidenced poor emotional wellbeing. A binary categorization was used for the CBCL scores (clinical or nonclinical) and the CDI scores (normal or clinical).

The original plan for analysis for research question 2 was to use a series of logistic regression models to determine the relationship between various mental health concerns and service use. One series of models was going to be conducted to examine the relationship between presence of trauma-symptoms and utilization of each type of mental health service. Finally, a second series of models was going to be conducted to examine the relationship between depressive symptoms and utilization of each type of mental health service, after controlling for behavioral problems.

Because research question 2 could not be addressed due to insufficient sample sizes, a follow-up analysis was also conducted. This analysis utilized the CBCL-Caregiver Report (Ages 4-18; N = 254) which provided a larger sample size. A cross-tabulation analysis was performed using the externalizing and internalizing subscales
to examine the degree of co-occurrence on both types of disorders. The internalizing subscale, which includes items that assess Social Withdrawal, Somatic Complaints, and Anxiety/Depression, was used as an alternative to the indicators of emotional well-being. A series of three independent sample t-tests were conducted to examine the relationship between various degrees of mental health disorder and mental health service use. Test 1 examined those children and youth who scored within the clinical range on the externalizing subscale only (n = 104); test 2 examined those children and youth who scored within the clinical range on the internalizing subscale only (n = 78); and test 3 examined those children and youth who scored within the clinical range on both subscales (n = 51).
Chapter 6

RESULTS

Upon conducting the cross-tabulation analyses for the CBCL-YSR, CDI, and TSCC, it was determined that there were insufficient sample sizes with which to answer research question 2 regarding service use. Of the sample (n = 185) that included the externalizing subscale and the CDI, there were only 15 children exhibiting a clinical level of depression without an externalizing disorder and another 11 children with a dual diagnosis. Of the sample (n = 188) that included the externalizing subscale and the TSCC, there were only 9 children exhibiting a clinical level of depression with an externalizing disorder and another 5 children with a dual diagnosis. Due to the insufficient sample sizes of children who fell within the clinical range on the 2 indicators of emotional well-being, the logistic regressions predicting service use from mental health status were not performed.

All of the t-tests yielded statistically significant results (p < 0.005). The first test examined the subsample of children with externalizing disorders only (n = 104) t = -5.07 (p < 0.000). Levene’s test for equality of variances yielded an F = 1.59 (p < 0.21). The mean number of services for children with an externalizing disorder was 3.43 compared to 2.3 for children in the rest of the sample. The second test examined the subsample of children with internalizing disorders (n = 78) only t = -3.17 (p < 0.002). Levene’s test for equality of variances yielded an F = 0.02 (p < 0.89). The
mean number of services for children with an internalizing disorder was 3.28 compared to 2.53 to the rest of the sample. For the third test that examined the subsample of children with both externalizing and internalizing disorders (n = 51), \( t = -4.50 \) \((p < 0.000)\). Levene’s test for equality of variances yielded an \( F = 0.86 \) \((p < 0.36)\). The mean number of services for children with a dual diagnosis was 3.69 compared to 2.53 for children in the remainder of the sample.
Chapter 7

DISCUSSION

The results from the follow-up analysis suggest that children with either an externalizing or internalizing disorder are on average receiving more services than those who are scoring within the normal range. Moreover, children with a dual diagnosis are receiving more services than either single diagnosis group. While children with internalizing disorders were receiving slightly fewer services than those with externalizing disorder, the difference was not statistically significant. Therefore, this hypothesis was not supported.

There are several possible reasons for this insignificant finding. Most children in foster care are required to receive a minimum amount of services due to their being in foster care and this may have minimized the variation of service receipt between children. The number of services children were receiving is also influenced by several other factors outside of their score on the CBCL including, but not limited to, health care insurance status, the availability and awareness of services, and differences in mental health diagnostics by clinical professionals.

All of these factors may have had a strong influence on the observed relationship between CBCL scores and health care receipt as well as the differences between children who were internalizing versus those who were externalizing. It is also important to note that almost 22% of children had a dual diagnosis suggesting that
many children in foster care have complex needs that likely require the coordination of several services. These findings also suggest that externalizing disorders need not always follow the onset of internalizing disorders. A full 41% of children exhibited externalizing disorders with no symptoms of internalizing disorder.

There are several limitations to the present study. Due to the inadequate sample sizes when using the self-reports of depression and trauma symptoms, the caregiver report was used in the follow-up analysis. This use of other-report could have resulted in a less accurate assessment of these children’s internalizing symptoms as they are not always readily accessible to the outside observer. This may be particularly true for the Anxiety/Depression syndrome scale within the internalizing scale and perhaps less so for Social Withdrawal and Somatic Complaints. The CBCL has also been shown to over-diagnose low-income minority children (Raadal, Milgrom, Cauce, & Mancl, 1994), and considering that these children are overrepresented in the foster care population, many of them may have less severe issues than their score suggests. The fact that relatively fewer children had clinical levels of depression according to their CDI score compared to their internalizing score may be in support of this argument that the CBCL tends to over-diagnose. However, because there are 2 other syndromes that are measured within this subscale this cannot be said with certainty.

Furthermore, because the General Release data set was used, there is a limited amount of information available on the individual participants outside of basic demographic information. Because service requirements and accessibility differ
greatly by agency and state of residence, it would have been beneficial to have had this individual-level information when assessing total service use to determine if location was a significant influencing factor.
Chapter 8

IMPLICATIONS

Future research should explore in greater depth the temporal relationship between mental health and service use for children in foster care in order to examine how the severity of mental health issues is related to changes in service use. While the direct assessment of children has increased in recent years, there is still a lot of research that needs to be conducted for us to come to a greater understanding on their subjective experience. This is especially true for children in foster care because they have such complex care histories that likely involve very difficult emotional experiences. Because foster caregivers may only have a child under their care for a few months and because they are given limited access to the child’s case files, they may be inadequately prepared to offer a good interpretation of their foster child’s psychological and emotional state.

In addition, more complex analyses are needed that account for other major factors that are likely influencing the relationship between health care need and service receipt. Variables to be examined should include health care insurance status, facilitators and barriers to obtaining services and the variation in screening processes between agency and geographic location.
Chapter 9

CONCLUSION

This study supports past studies that have reported high levels of mental health issues within the foster care population. It also supports past findings that a substantial proportion of children in care (22% of the present sample) have complex needs that require the coordination of several services. The results from this study also suggest that children who are suffering with both externalizing and internalizing disorders tend to be in need of more clinical care than kids with either single diagnosis. Future research should employ more measures that assess truly internal symptoms of distress in the domain of emotional and psychological well-being in addition to behavioral assessments. By adding in such measures we could gain a greater understanding of the services those kids are receiving who are not manifesting their distress in an outward manner. Additional variables should also be examined to better understand the complex relationship between mental health care need and service use.
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Appendix

PERMISSION LETTER

Data Set Permission Letter

Thank you for requesting data from the National Data Archive on Child Abuse and Neglect. Attached is a listing of the dataset(s) you are receiving.

Shortly, you will receive an e-mailed invitation from box.com to download the data. Make sure that your junk mail filters allow you to get mail from box.com.

You (i.e. the e-mail address in the to field of this message), have been added to the box.com download folder as a collaborator. If you don’t already have a free box.com account that is connected to that e-mail address, you have to create one and sign in to box.com to download your data.

➔ Your file(s) for download will expire in 7 calendar days please download immediately ◀

Each dataset is distributed in one compressed .Zip package which contains the data files. Please extract the contents of the .zip package to a folder on your hard drive/desktop before attempting to open the data files in your statistics software. You can open .zip packages with MS Windows’ built-in extraction (open the .zip package and choose File > Extract All…). You can also use a free utility called 7Zip, or other zip package software.

After you have extracted the contents of a .zip package to your hard drive, open the readme file for information about the files. If you need help loading the data, please e-mail NDACANSupport@cornell.edu and a staff person will contact you. In addition, our User Support section at www.ndacan.cornell.edu contains help documents for several data procedures.

The Archive will contact you once a year about this order to request copies of publications or presentations that you may have produced from these data.

If you have a questions about files shipment issues, please contact me.
Thank you.

Sincerely,
Andres Arroyo, Archiving Assistant
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