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Preschoolers' use of mental health services: An application of the Behavioral Model for Vulnerable Populations

Maintaining good mental health is crucial for children's development. It is particularly important for young children because it can affect their brain development and capacities for learning and interacting with others (Center on the Developing Child, 2013). Good mental health helps children deal with problems properly and, in turn, improve their quality of life (Perou *et al.*, 2013). However, prior research reported that one out of seven young children (aged two to eight years) has mental health problems, including behavioral and developmental disorders (Perou *et al.*, 2013). The common diagnoses of mental health disorders in young children include Attention-deficit/hyperactivity disorder (ADHD) (6.8%), behavioral or conduct problems (3.5%), anxiety (3.0%), depression (2.1%), and autism spectrum disorder (1.1%) (Bitsko *et al.*, 2016).

Although prior studies have examined mental health services utilization in school-age children, there has been little attention to preschoolers, typically defined as ages 3 to 5 years old. Mental health services use in preschoolers is a critical issue because early intervention can prevent problems from becoming exacerbated and reduce the chance of being exposed to sociopsychological risks (Reid *et al.,* 2003). It is reported that about 10% to 20% of preschoolers who used mental health services in the primary care setting were found to have considerable behavioral problems (Rich & Eyberg, 2001). Furthermore, Brown *et al.* (2012) investigated the social and emotional screening scores among children aged 3-4 years using an Ages and Stages Questionnaire and supplemental questions responded by parents, and found that about 24% of the children showed a positive screening result for social-emotional problems, but only 16% of them were referred to behavioral health services (i.e., developmental counselor, specialist, etc.). Similarly, Kataoka *et al.* (2002) found that about 80% of the children who needed mental health services did not receive care; particularly, the rate of using mental health services among preschoolers was the lowest.

To understand the mechanisms of mental health services utilization and implement effective prevention in preschoolers, we will employ the most commonly used model, the Behavioral Model for Vulnerable Populations (Gelberg *et al.,* 2000) (Figure 1), derived from Andersen's Behavioral Model of Health Service Utilization (Andersen, 1995). In the Andersen model, the use of health services is predicted by predisposing factors including demographic characteristics, enabling factors such as insurance and income, and people's need for care. The Behavioral Model for Vulnerable Populations extended the Andersen model by including the "vulnerable" domain to understand the health and health-seeking behavior of vulnerable populations. This revised model is appropriate for children as they must rely on their parents or caregiver to be cared for (Tschann, 1996). Vulnerability-related factors include family conflicts, parents' mental illness and low SES, child maltreatment, and neglect and abuse (Tschann *et al.*, 1996; Wichstrøm *et al.*, 2014; Leslie *et al.,* 2005; Vasileva & Petermann, 2016); all of which may affect children's mental health.

Guided by the Behavioral Model for Vulnerable Populations, this study examined which factors may affect preschoolers' use of mental health services and being diagnosed with

a mental health disorder. The study hypotheses were: (1) parental and vulnerability-related factors play significant roles in the mental health services use and likelihood of being diagnosed with a mental health disorder among preschoolers; and (2) there exists variation in preschoolers' use of mental health services and the likelihood of being diagnosed with a mental health disorder depending on their care status.

Methods

Data source and study sample

Data were drawn from the 2011-2012 National Survey of Children's Health (NSCH), a telephone survey conducted by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC) under the direction and support of the federal Maternal and Child Health Bureau. NCSH provides detailed information regarding physical and mental health, access to health care, and the social environment among children. In particular, the 2011-2012 NSCH includes new information about adverse family experiences.

The 2011-2012 NSCH was based on a complex survey design with stratification by state and sample type; that is, randomly sampled landline telephone numbers were called to identify households with children ages 0-17, added with an independent random-digit-dial (RDD) sample of cell-phone numbers (Data Resource Center, 2012). In total, parents of 95,677 children were interviewed nationally, and among them, about 1,850 interviewed were collected per state (NSCH, 2012). If there were more than one child in a household, one child was randomly selected for the interview. The NSCH interview completion rate was 54.1% for the landline sample and 41.2% for the cell-phone sample (DRC, 2012). The study sample size was 15,910 preschoolers, defined as children ages 3-5 years old according to the definition from CDC (CDC, 2016).

Measures

The first outcome was '*general MH service use*,' coded as a binary variable and based on the question "During the past 12 months, has a child received any treatment or counseling from a mental health professional?" In NSCH, mental health professionals include psychiatrists, psychologists, psychiatric nurses, and clinical social workers. The second outcome was '*A*

mental health disorder,' coded as a binary variable and based on the question, "Whether a doctor or other health care provider ever told a child or the child's parent that he/she had Attention Deficit Hyperactivity Disorder (ADHD), conduct disorders, or depression, respectively."

Predictors were selected based on the Behavioral Model for Vulnerable Populations (Figure 1). Predisposing factors included demographic variables such as sex, age, and race or ethnicity. 'Race' was categorized into the three: 'White, non-Hispanic,' 'Black, non-Hispanic,' and 'Other (Hispanic, Asian, and American Indian/Alaskan Native)'. 'Frequency of attending a religious service' was categorized into 'once per year,' 'once per month,' 'once per week,' and 'daily'. Enabling factors included health insurance status, poverty level, community resources (i.e., a recreation center), and parents' or a caregiver's employment status, and parents' or a caregiver's educational level. 'Poverty level of a household (x)' was categorized as 'x<133%,' '133%≤ x< 185%,' '185%≤ x< 300%,' and 'x≥300%' of the poverty level based on the Department of Health and Human Services (DHHS) guidelines. 'Parents' or a caregiver's employment' indicated whether or not a child lived with someone employed for at least 50 weeks out of the past 52 weeks. 'Parents' educational level' was categorized into three: 'less than high school,' 'high school graduate,' and 'more than high school.' The Need factor was parents' concern about a child's learning, development, or a behavior' as a binary variable. Vulnerability-related factors included receipt of public benefits (i.e., Supplemental Nutrition Assistance Program), a mother's mental health illness ('excellent/good,' 'good/fair,' and 'poor'), parents' or a caregiver's substance use, living with a divorced or separated parent, involved in or experienced violence, and receiving care from an unrelated person for at least 10 hours per week, which generally refers to a daycare center, preschool, Head-Start program, or nanny.

Data analysis

All analyses incorporated the NSCH survey weights. All outcomes and factors were described and comparisons were based *t* test for continuous variables and Rao-Scott chi-squared tests for categorical variables. No-reported answer (missing values) was treated as a separate level to

retain the sample size. Multivariable logistic regression was used to examine the independent effects of various factors associated with the use of mental health services and being diagnosed with a mental health disorder. Guided by the theoretical model, the four sets of factors were entered into the model sequentially, with Model 1 containing only predisposing factors, Model 2 adding enabling factors, Model 3 adding need factors, and Model 4 adding vulnerability-related factors. Furthermore, the effect of receiving care from unrelated personnel was explored on the association between care status and mental health services use and a diagnosis of mental health disorder. The interaction between these two variables was entered into the multivariate logistic models. To simplify the interpretation, the odds ratios were reported from the logistic models.

Results

Unweighted counts of preschoolers and weighted percentages are presented in Table 1. Half of the study preschoolers were boys and each age accounted for about one-third of the sample. There were 13.33% African American preschoolers and 62.28% Caucasian preschoolers. Most of them attended some religious services. Among enabling factors, 31.15% of preschoolers lived in a family with income at or below 133% of the federal poverty level. 16.25% of their parents or caregivers were unemployed, and 16.80% of the parents or caregivers had less than high school education. For a need factor, 10.99% of parents were concerned about their child's behavior. Among vulnerability factors, 30.07% of preschoolers received public benefits (Supplemental Nutrition Assistance Program). Only 0.85% of preschoolers had mothers with poor mental health, about 7.24% had parents using alcohol or drugs, and 3.89% of preschoolers were involved in or had experienced violence. Over half (51.79%) of preschoolers received care from an unrelated person (e.g., daycare teacher). Finally, about 3.80% of preschoolers received mental health services, and 3.33% had a diagnosis of a mental health disorder, including 1.76% ADHD, 1.65% conduct disorders, 0.30% depression, and 0.94% anxiety. 1.25% of preschoolers had moderate or severe ADHD, and 1.09% of preschoolers had moderate or severe conduct problems.

Table 2 shows the results from our four logistic regressions for the use of mental health services. Boys were more likely to receive mental health services, and age remained significant in all four models. No racial difference in mental health services use was found among preschoolers. Parents with more education (high school graduate) were positively predictive for preschoolers to receive mental health services compared with those with less education (less than high school) (OR: 1.76, [95%CI: 1.04-2.96]). Parents' concern about a child's behavior was significantly, positively associated with mental health services use in preschoolers (OR: 9.43, [95%CI: 6.62-13.44]). Preschoolers with mothers with poorer mental health (i.e., good or fair) were more likely to receive mental health services compared with those with mothers with excellent or very mental health (OR: 1.58, [95%CI: 1.09-2.29]). Parents using alcohol or drugs (OR: 2.68, [95%CI: 1.66-4.33]), living with a divorced or separated parent (OR: 1.66 [95%CI: 1.04-2.64]), and violence involvement or experience (OR: 3.69, [95%CI: 2.01-6.74]) were positively associated with mental health services use in preschoolers. Preschoolers who received care from unrelated persons (i.e., daycare teachers) were more likely to receive mental health services compared with those who did not receive care from unrelated persons (OR: 1.47, [95%CI: 1.04-2.09]).

Similar results were found for preschoolers being diagnosed with a mental health disorder (Table 3). For example, boys (OR: 2.10, [95%CI: 1.44-3.05]) and older ages (OR: 1.59, [95%CI: 1.21-2.08]) were more likely to be diagnosed with a mental health disorder than girls and younger ages. The other key predictors included parents' education (more than high school) (OR: 1.96, [95%CI: 1.09-3.52]), parent's concern about a child's behavior (OR: 14.35, [95%CI: 9.67-21.29]), and the vulnerability factors such as parents using alcohol or drugs (OR: 2.23, [95%CI: 1.33-3.73]), or violence involvement or experience (OR: 2.94, [95%CI: 1.39-6.19]).

To drill deeper into the understanding of mental health services use in preschoolers, we explored how receiving care from an unrelated person including attending a daycare or a Head Start program, interacts with other factors in predicting preschoolers' use of mental health services. Our results showed that 4.43% of

preschoolers who were cared for by unrelated persons were seen by a mental health professional, compared with only 3.13% of those who were not cared for by unrelated persons (p<0.05). In the interaction model exploring care status and other key factors, those who received public benefits and were cared for by unrelated persons were 78% less likely to visit a mental health professional than those who did not receive public benefits and were cared for by family members (p=0.007).

Discussion

To our knowledge, this study is the first to examine which factors may affect preschoolers' use of mental health services by applying the Behavioral Model for Vulnerable Populations based on a nationally representative sample. Overall, a small percentage of preschoolers used mental health services and was diagnosed with a mental health disorder. Notably, parental factors including parents' education and concerns about a child's behavior, and most of the vulnerable factors were associated with the use of mental health services among preschoolers.

Our results demonstrate the importance of family resources and parental influence on mental health services use among preschoolers. Amone-P'Olak et al. (2010) also examined the relationship between the family socioeconomic position (SEP) and specialty mental health services use among children by controlling for the severity of their mental health problems and found that a higher maternal educational level was positively associated with the likelihood of using specialty mental health services among children. Similarly, Wu et al. (2001) found that maternal education level was positively predictive for children and adolescents with depression to receive antidepressants. However, it was not related to whether they received help from a health professional (e.g., psychiatrist, psychologist, etc.) for their depressive symptoms (Wu et al., 2001).

Parents' concern about a child's behavior was significantly predictive for preschoolers to receive mental health services and to be diagnosed with a mental health disorder. This finding may be explained by previous research findings that the probability of receiving mental health services among children with behavioral problems depended on their parents' recognition

on their problems and need for help (Wichstrøm et al., 2014). Sayal & Taylor (2004) found that the expression of parents' concern about a child's mental problems during the consultation positively influenced the sensitivity of general practitioners' recognition of the problem, which caused them to take parental views into account. However, only a few parents expressed concerns about their child's mental health problems (Sayal et al., 2003). Thus, if parents are unaware of mental health problems in their younger children or assume those mental health problems are temporary and normative, those children will not receive proper mental health care that they need (Finno-Velasquez et al., 2015; Owens et al., 2002; Richardson, 2001). Parents' negative expectation or stigma associated with mental health services would also be a barrier to a child's mental health services use (Richardson, 2001; Dempster et al., 2015; McKay et al., 2001).

In this study, attending a religious service was not related to mental health services use among preschoolers. Previous research, however, found a relationship between religiosity or spirituality and mental health services utilization. Deb et al. (2016) examined the relationship between spirituality and mental health among university students in India and found a strong, positive association between them, pointing out the importance of spirituality that could support the better mental health of them. Lukachko et al. (2015) explored the relationship between religiosity and mental health services use among African-American adults and found an inverse association between them, indicating more religious people were less likely to use mental health services. This may be due to churches in the U.S. also providing various community services such as primary care, mental health counseling, and health promotion (Blank et al., 2002; Levin 1984). However, all previous studies were conducted in adults, while the current study focused on preschoolers. This may explain the difference between our results and previous findings.

Preschoolers cared for by unrelated persons such as daycare teachers may have different implications for mental health services use. Daycare teachers may be more likely to identify child mental health problems than parents, which could lead to greater use of mental health services in preschoolers. On the other hand, non-

parental caregivers may neglect the symptoms related to mental health problems due to culture, stigma, or communication barriers. We found that preschoolers cared for by unrelated persons were more likely to receive mental health services and more likely to be diagnosed with a mental health disorder, suggesting the former explanation. This finding is consistent with previous literature in which children who were in daycare centers were more likely to be identified with mental health problems (Wichstrøm et al., 2014). Furthermore, receiving public benefits had an inverse interaction with the care status in predicting mental health services use, suggesting that poor preschoolers may receive suboptimal care from unrelated persons. This is of particular concern because poor preschoolers were more likely to have mental health problems (McLeod & Shanahan, 1993; Reiss, 2013).

It is an essential but a hard task to identify young children with mental health problems and to provide appropriate mental health care and treatment on time. Despite the expansion of Medicaid in most states and the continuation of the Children's Health Insurance Program (CHIP) that have made significant contributions to improving children's health outcomes (Burns et al., 1997; 2004), mental health services remain difficult to access and treatment is often ended prematurely (Hoagwood et al., 2001). Among children who received outpatient mental health treatment, approximately 40% to 60% of them discontinued prior to completion of treatment (Hoagwood et al., 2001). In particular, minority children and those from low socioeconomic status (SES) backgrounds were less likely to stay in treatment beyond the first session and more likely to discontinue treatment (Tuma, 1989; Kazdin, 1993). Without timely diagnosis and treatment, children with mental disorders may not only struggle during their school years but also suffer from developmental problems that follow them into their adulthood (Kessler et al., 2005).

This study is not without limitations. First, although numerous predictors for mental health services use in preschoolers were found, we may not infer the causation of those associations. Second, the measures of the severity of mental health disorders were limited by parents' or a caregiver's evaluation. Nevertheless, prior studies validated the parents' or caregivers' reports concerning children's illnesses. Third, there could be other factors (i.e., moderating predictors) associated with mental health services use among preschoolers that we did not examine. One example would be social support including relationships with family members and friends, or parents' receipt of social support. Fourth, we did not address the barriers that inhibit a family to seek mental health care. The percentage of preschoolers with mental health problems in this study appears too small. However, this is an important topic that warrants further research. Lastly, developmental conditions including learning disability, and social interaction conditions such as autism were not examined in this study. However, dealing with these conditions requires different theoretical models and involves different and more psychological and health care providers. We will explore these issues separately.

The study has some notable strengths. First, the study subjects are preschoolers, a population that were largely neglected in previous research. Second, we systematically examined the factors associated with mental health services use in preschoolers with the Behavioral Model for Vulnerable Populations framework (Figure 1). This ensures a thorough understanding of the mental health problems among children. Third, we used a nationally representative sample, and incorporated post-stratification survey weights in the survey analyses, so that the study results can be generalized to the US preschooler populations. Finally, we explored various two-way interactions such as being cared for by unrelated persons including daycare teachers and receiving public benefits. Evidence was scarce on these issues.

Recommendations

Although parents' concern about their children's mental health problem may help health providers to detect them earlier, parents may lack adequate knowledge of mental health issues, or have negative expectations or stigma associated with mental health services use. Educational interventions for parents and daycare teachers are needed because children must depend on their parents or caregivers to identify mental health problems and to receive adequate care. Furthermore, disparities in

mental health services use among socially disadvantaged children should be addressed. More comprehensive evaluations and interventions should be provided to vulnerable children with mental health care needs, particularly those from families with violence and substance use problems.

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Figure 1. Conceptual framework for factors influencing preschoolers' use of mental health services and being diagnosed with a mental health disorder. Adapted based on the Behavioral Model for Vulnerable Populations (Gelberg et al., 2000).

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┌──────────────────────────┐
│   Predisposing factors   │
│           Age            │
│           Sex            │
│     Race or Ethnicity    │
│         Religion         │
└──────────────────────────┘

┌──────────────────────────┐        ┌──────────────────┐        ┌──────────────────────┐
│     Enabling factors     │        │  Utilization of  │        │  Diagnosis of any    │
│      Health Insurance    │───────▶│  Mental Health   │───────▶│    mental health     │
│ Poverty level of a household │    │     Services     │        │      disorder        │
│    Community resources   │        └──────────────────┘        └──────────────────────┘
│     Parents' employment  │                                              │
│      Parents' education  │                                              ▼
└──────────────────────────┘                                  ┌──────────────────────┐
                                                               │   Evaluated ADHD     │
┌──────────────────────────┐                                  │ Evaluated conduct    │
│        Need factor       │                                  │      disorder        │
│ Parents' concern about a │                                  │ Evaluated depression │
│    child's behavior      │                                  │  Evaluated anxiety   │
└──────────────────────────┘                                  └──────────────────────┘

┌──────────────────────────┐
│   Vulnerability factors  │
│ Receipt of public benefits │
│ Parents' mental health status │
│ Parents using substances │
│ Living with a divorced/separated │
│          parent          │
│ Violence involvement or  │
│        experience        │
│ Receipt of care from unrelated │
│ persons (daycare teachers) │
└──────────────────────────┘
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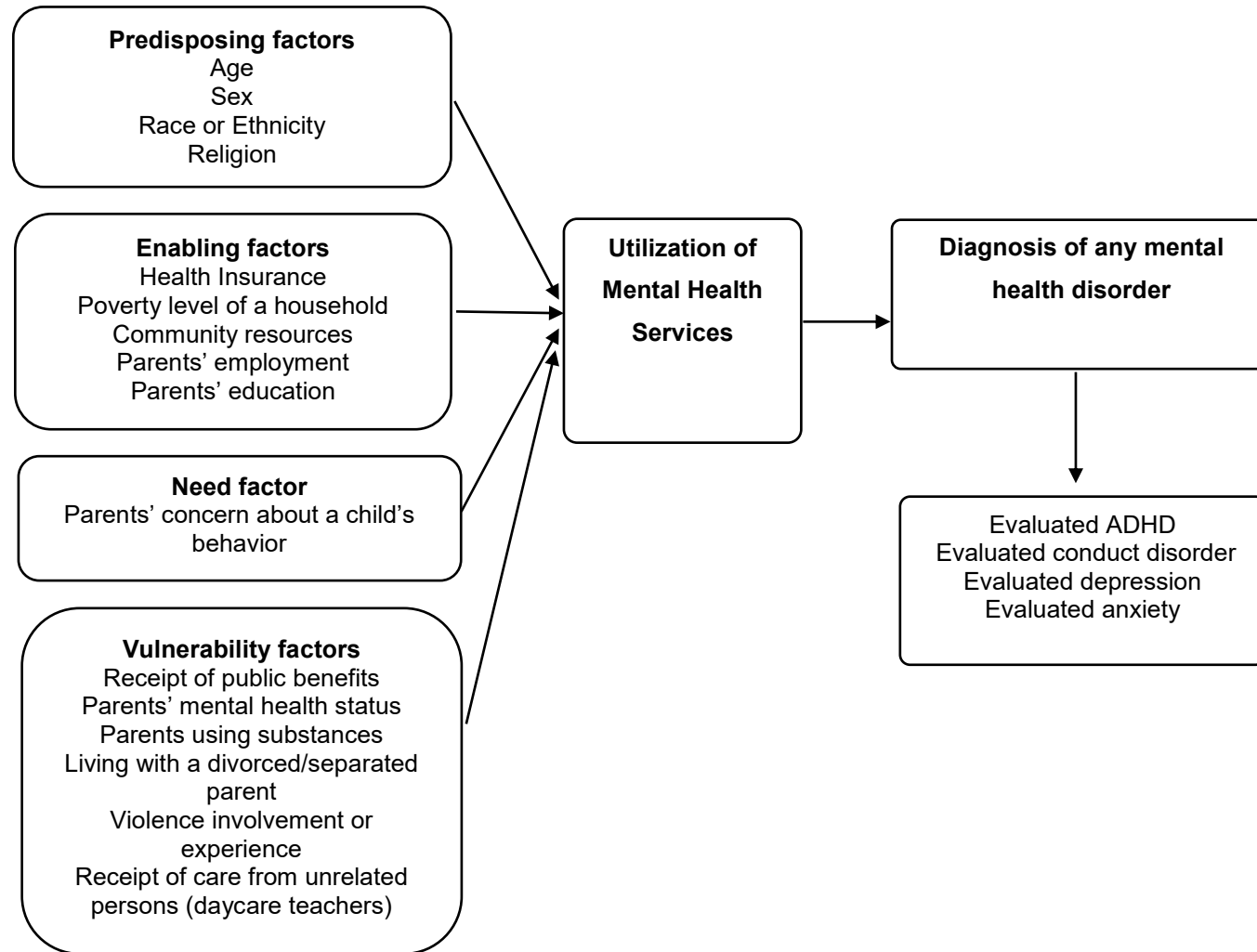
Table 1. Sample characteristics of preschoolers
        in the 2011-2012 NSCH Survey [a]

Characteristic	Preschooler (N=15,910)		
	Un-weighted N	Weighted %	Standard Error (SE)
Predisposing			
Sex			
male	8140	50.93	0.88
female	7770	49.06	0.88
Age			
3 yr	5363	32.50	0.83
4 yr	5300	33.67	0.82
5 yr	5247	33.81	0.84
Race			
Black	1637	13.33	0.59
White	10940	62.28	0.87
Other	3333	24.38	0.81
Attending a religious service			
once per year	1204	6.83	0.40
once per month	2433	15.96	0.70
once per week	7473	49.02	0.88
daily	143	0.88	0.12
not reported	4657	27.28	0.76
Enabling			
Currently being insured			
yes	15295	94.77	0.48
no	615	5.22	0.48
Poverty level of household (x)			
x < 133%	3796	31.15	0.83
133% ≤ x< 185%	1207	8.86	0.52
185% ≤x< 300%	2731	17.95	0.70
x ≥ 300%	6776	32.92	0.77
Presence of a recreation center			
yes	10719	66.15	0.84
no	4642	29.49	0.82
Parents' employment status			
yes	13573	80.78	0.72
no	1979	16.25	0.72
not reported	358	2.95	0.34
Parents' educational level less than			
high school	1955	16.80	0.73
high school graduate	4735	28.93	0.78
more than high school	8275	46.07	0.87
Need			
Concerns about a child's behavior			
yes	1578	10.99	0.56
no	14332	89.00	0.56
Vulnerability			
Received public benefits			
yes	3626	30.07	0.82
no	5114	33.72	0.85
not reported	7170	36.19	0.81
Mother's mental health excellent/			
very good	11191	68.18	0.82
good/fair	3471	24.61	0.76
poor	112	0.85	0.18

Characteristic	Preschooler (N=15,910)		
	Un-weighted N	Weighted %	Standard Error (SE)
Predisposing			
Parents using alcohol or drugs			
yes	1198	7.24	0.45
no	14425	90.75	0.49
Involved in or experienced violence			
yes	595	3.89	0.30
no	15026	94.11	0.36
Living with divorced or separated parent			
yes	1946	13.78	0.63
no	13674	84.36	0.65
Received care from unrelated person			
yes	8727	51.79	0.88
no	7183	48.20	0.88
Outcomes			
General MH Service Use	619	3.80	0.30
A mental health disorder	467	3.33	0.29
Evaluated ADHD	250	1.76	0.20
mild	71	0.51	0.11
moderate	115	0.72	0.11
severe	64	0.53	0.11
Evaluated conduct disorder	199	1.65	0.21
mild	59	0.56	0.13
moderate	98	0.79	0.14
severe	42	0.30	0.08
Evaluated depression	34	0.30	0.09
mild	-	0.15	0.06
moderate	-	0.08	0.02
severe	-	0.06	0.06
Evaluated anxiety	175	0.94	0.05
mild	80	0.45	0.13
moderate	73	0.40	0.08
severe	22	0.08	0.02

a. NSCH, National Survey of Children's Health

Table 2. Four progressively adjusted logistic regressions for examining preschoolers' use of general mental health services

Variables	General Mental Health Services Use			
	Model 1 OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Predisposing				
Boy (ref.: girl)	1.94 (1.39,2.69)***	1.93 (1.40 ,2.67)***	1.41 (0.99 ,2.00)*	1.62 (1.13 ,2.30)**
Age	1.84 (1.46,2.30)***	1.87 (1.49 ,2.36)***	1.84 (1.45 ,2.34)***	1.76 (1.38 ,2.25)***
White (ref.: Black)	1.01 (0.59,1.73)	1.21 (0.69 ,2.13)	1.27 (0.71 ,2.27)	1.42 (0.76 ,2.65)
Enabling				
Currently being insured (yes vs. no)		2.65 (0.90 ,7.76)*	4.17 (1.23 ,14.12)*	4.19 (1.46 ,12.05)**
Poverty level of household (ref: <133%)				
185% -300%		0.85 (0.54 ,1.34)	0.95 (0.58, 1.55)	0.93 (0.53 ,1.60)
Parents' employment (yes vs. no)		0.67 (0.47 ,0.96)*	0.77 (0.52 ,1.14)	0.73 (0.49 ,1.08)
Parents' educational level (ref: less than high school)				
high school graduate		1.21 (0.73 ,2.00)	1.47 (0.85 ,2.54)	1.17 (0.68 ,2.02)
more than high school		1.72 (1.05 ,2.83)*	2.08 (1.21 ,3.59)**	1.76 (1.04 ,2.96)*
Need				
Concerns about a child's behavior			11.07 (7.89 ,15.53)***	9.43 (6.62 ,13.44)***
Vulnerability				
Received public benefits				0.62 (0.39 ,0.99)*
Mother's mental health (ref.: excellent/very good)				
good/fair				1.58 (1.09 ,2.29)*
poor				0.84 (0.21 ,3.29)
Parents using alcohol or drugs				2.68 (1.66 ,4.33)***
Living with a divorced or separated parent				1.66 (1.04 ,2.64)*
Violence involvement or experience				3.69 (2.01 ,6.74)***
Received care from unrelated person				1.47 (1.04 ,2.09)*

Note. *** p<.001; **p<.01; *p≤.05

Table 3. Four progressively adjusted logistic regressions for examining preschoolers' being diagnosed with a mental health disorder

Variables	A Mental Health Disorder			
	Model 1 OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Predisposing				
Boy (ref.: girl)	2.66 (1.86, 3.79)***	2.69 (1.89 ,3.83)***	1.81 (1.24 ,2.65)**	2.10 (1.44 ,3.05)***
Age	1.64 (1.28,2.11)***	1.67 (1.30 ,2.16)***	1.64 (1.26 ,2.14)**	1.59 (1.21 ,2.08)***
White (ref.: Black)	0.61 (0.37,1.01)§	0.79 (0.47 ,1.33)	0.82 (0.47 ,1.43)	0.96 (0.55 ,1.67)
Enabling				
Currently being insured (yes vs. no)		0.66 (0.30 ,1.41)*	1.09 (0.43 ,2.74)*	1.23 (0.57 ,2.67)**
Poverty level of household (ref: <133%)				
185% -300%		0.56 (0.31 ,1.01)*	0.64 (0.34, 1.19)	0.69 (0.36 ,1.31)
Parents' employment (yes vs. no)		0.60 (0.41 ,0.89)*	0.72 (0.47 ,1.11)	0.69 (0.45 ,1.06)
Parents' educational level (ref: less than high school)				
high school graduate		1.69 (0.96 ,2.96)	2.43 (1.32 ,4.46)**	2.10 (1.17 ,3.79)*
more than high school		1.63 (0.91 ,2.90)	2.15 (1.15 ,4.01)*	1.96 (1.09 ,3.52)*
Need				
Concerns about a child's behavior			17.16 (11.86 ,24.83)***	14.35 (9.67 ,21.29)***
Vulnerability				
Received public benefits				0.94 (0.60 ,1.47)
Mother's mental health (ref.: excellent/very good)				
good/fair				1.45 (0.96 ,2.18)
poor				2.60 (0.80 ,8.38)
Parents using alcohol or drugs				2.23 (1.33 ,3.73)**
Living with a divorced or separated parent				1.14 (0.70 ,1.85)
Violence involvement or experience				2.94 (1.39 ,6.19)**
Received care from unrelated person				1.26 (0.86 ,1.83)

Note. *** p<.001; **p<.01; *p≤.05