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Worsening Symptoms of Anxiety, Depression, and Sleep Problems in Caregivers Following Youth's Suicide-Related Emergency Department Visit

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ABSTRACT

Objective: Although families assume considerable responsibility in caring for their child after a suicidal crisis, little is known about caregiver well-being following a suicide-related pediatric Emergency Department (ED) visit. This study aimed to (1) describe the course of caregiver distress symptoms (e.g., anxiety, depression, and negative affect) and sleep problems following their child's suicide-related ED visit and to (2) identify factors (e.g., parents' mental health history, youth suicide risk chronicity, and perception of feeling supported by the mental health system) hypothesized to be related to caregiver distress symptoms and sleep problems at follow-up using a diathesis-stress model framework.

Method: Participants included 118 caregiver/youth (ages 11–17) dyads presenting to a psychiatric ED due to youths' suicide-related concerns. Caregivers and youth were assessed during index ED visit and 2-weeks following discharge.

Results: Caregivers' anxiety and depressive symptoms and sleep problems increased significantly from the time of the ED visit to 2-week follow-up. There was no significant change in caregiver negative affect. Caregivers with their own history of mental illness and those whose children had a previous ED visit due to a psychiatric concern, suggestive of chronic suicide risk, reported higher anxiety and depressive symptoms at follow-up.

Conclusion: In the 2 weeks following an ED visit for their child's suicidal crisis, caregivers reported significant increases in anxiety and depressive symptoms and sleep problems. Findings highlight the need to consider the mental health of caregivers whose children are at elevated risk for suicide.

KEYWORDS

Caregivers; emergency department; parents; suicide; youth

HIGHLIGHTS

1. Caregivers report increases in distress symptoms following youth's suicidal crisis.
2. Caregiver mental health history and youth suicide chronicity impacted distress.
3. Caregiver mental health should be considered when planning youth interventions.

Suicide has been the second leading cause of death among youth ages 10-17 in the United States for the past decade (Centers for Disease Control & Prevention [CDC], 2019). Rates of suicidal ideation and attempts in this age group are similarly pervasive (Ivey-Stephenson et al., 2020), with a corresponding rise in suicide-related Emergency Department (ED) usage (Yard et al., 2021). While suicide rates are heightened in the weeks following hospital and ED discharge (Goldman-Mellor, Olfson, Lidon-Moyano, & Schoenbaum, 2019; Knesper, 2011), linkage to outpatient care post-ED visit can take months (Sobolewski, Richey, Kowatch, & Grupp-Phelan, 2013). Caregivers of youth seen in EDs are frequently provided with recommendations designed to maintain youth safety at home (e.g., encouraging use of safety plan, restricting access to lethal means, monitoring risk, accessing outpatient care) (Ewell Foster et al., 2022). Unfortunately, little is known about the capacity of caregivers to take on these responsibilities or about the distress they may experience during this time. Youth suicide risk has been linked to caregiver strain among families in community-based (Barksdale, Walrath, Compton, & Goldston, 2009) but not ED settings (Molteni et al., 2017). Previous studies have documented the critical role of families in facilitating treatment access, engagement, and outcomes for youth at risk for suicide (Asarnow et al., 2011; Ougrin, Tranah, Stahl, Moran, & Asarnow, 2015), yet parental psychopathology is a risk factor for poor treatment outcomes (Eckshtain, Marchette, Schleider, Evans, & Weisz, 2019), suggesting the need for further research.

In this brief report, we aim to (1) quantify and describe the course of caregiver distress symptoms (e.g., anxiety, depression, negative affect) and sleep problems 2 weeks after their child's suicide-related ED visit and (2) identify clinically relevant predictors of these symptoms. Utilizing a diathesis-stress model (Zuckerman, 1999), we hypothesized that caregivers with their own mental health history would be at higher risk for distress symptoms following their child's suicide crisis. Since the frequency and intensity of a child's distress and pain (Cousino & Hazen, 2013) and health system-related stressors (Golfenshtein, Srulovici, & Medoff-Cooper, 2016) are known contributors to caregiver stress among youth with medical illnesses, we examined these factors in a psychiatric sample. We specifically explored whether the chronicity of youth suicide risk, defined as previous psychiatric visits to the ED, and the extent to which caregivers received the outcome they were hoping for during their ED visit (discharged home vs. hospitalization) would predict caregiver distress symptoms either alone or in interaction with caregiver mental health history.

MATERIALS AND METHODS

Participants

Participants included 118 youth ages 10–17 ($M = 14.64$, $SD = 1.88$) and 118 caregivers (M age = 45.15, $SD = 7.97$) presenting to a psychiatric ED at an academic medical center due to youth suicide-related concerns. Participant demographic information is depicted in Table 1. Approximately 66% ($n = 78$) of caregivers and 60% ($n = 71$) youth completed the 2-week follow-up.

TABLE 1. Participant demographics.

Characteristic	N	%
Youth gender		
Female	67	56.8
Male	45	38.1
Transgender	3	2.5
Gender non-conforming	3	2.5
Relationship to youth		
Biological mother	87	73.7
Biological father	16	13.6
Stepparent	3	2.5
Legal guardian/other	12	10.2
Caregiver gender		
Female	97	82.2
Male	21	17.8
Caregiver race/ethnicity ^a		
Caucasian	103	87.3
African American	7	5.9
Hispanic	7	5.9
American Indian/Alaskan Native	6	5.1
Asian	3	2.5
Pacific islander	1	0.8
Chief complaint ^b		
Suicidal ideation, suicide attempt, NSSI	103	87.3
Suicidal ideation	94	79.7
Suicide attempt	10	8.5
NSSI/self-harm	22	18.6
Other	15	12.7
Psychiatric evaluation	4	3.3
Depression	6	5.1
Anxiety	2	1.6
Aggression/homicidal ideation	3	2.5
Mood dysregulation	3	2.5
Family income ^c		
\$0–\$50,000	23	19.5
\$50,000–\$100,000	23	19.5
\$100,000–\$200,000	39	33.1
\$200,000 and over	7	5.9
Insurance type		
Private	92	78
Public	19	16.1
Both private and public	1	0.8
Uninsured	1	0.8

^aParticipants were able to select as many categories as appropriate for race/ethnicity.

^bCategories are not mutually exclusive.

^cIncome information was missing for 22% ($n = 26$) of families.

Note. NSSI: non-suicidal self-injury

Procedures

Recruitment occurred between September 2018 and March 2020. Youth presenting with suicide-related complaints (see Table 1 for breakdown) who were accompanied by a parent or legal guardian were eligible to participate. Of the dyads approached, 66% consented to participate. Presenting chief complaint was reported by parent at ED intake with eligibility defined broadly, as suggested by ED leadership, with the goal of capturing youth at risk for suicide who often present with a variety of psychiatric concerns (Ballard et al., 2017). Youth experiencing intoxication, cognitive impairment, psychosis, severe aggression/agitation, or who were non-English speaking were ineligible to

participate. Institutional Review Board approval was obtained. Youth and caregivers completed a battery of measures during their ED visit and 2 weeks after discharge via an online survey. Participants were compensated for the baseline (\$10 for youth, \$5 for caregivers) and follow-up assessments (\$5 each).

Measures

Caregivers provided information on family demographics, their own mental health history, and current distress symptoms. Caregivers' current symptoms of anxiety and depression were measured with the four-item Patient Health Questionnaire-4 (PHQ-4; Kroenke, Spitzer, Williams, & Löwe, 2009). Sleep problems were measured using the seven-item Insomnia Severity Index (ISI; Morin et al., 2011). The 10-item negative subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988) measured caregivers' negative emotions in the last week. Two items from the adapted Family History Screen (FHS; Weissman et al., 2000) were used to assess caregivers' lifetime mental health history and history of psychiatric hospitalization. Caregivers self-reported their child's history of previous ED visits for a mental health concern and their preferred outcome of the ED visit (e.g., referral to an outpatient provider/discharge home, in-patient hospitalization). A variable marking the discrepancy between caregivers' preferred outcome and the recommended ED disposition was used as a measure of health system-related stress. Youth provided demographic information and completed the 15-item Suicide Ideation Questionnaire-Junior (SIQ-Jr; Reynolds, 1987). Youth ED disposition (i.e., recommendation for hospitalization or discharge) was obtained from the medical record. At 2-week follow-up, caregivers were reassessed on all measures. Family income (a proxy for socioeconomic status) and youth baseline SIQ-Jr were related to retention and controlled for in all multivariate analyses. For a more thorough description of measures, see Ewell Foster et al. (2021).

Data Analysis

Paired samples *t*-tests were used to examine changes in caregivers' self-reported symptoms of anxiety, depression, negative affect, and sleep problems between baseline and 2-week follow-up. Two sets of hierarchical linear regression models were computed to examine predictors of (1) overall anxiety and depressive symptoms as measured by PHQ-4 total score and (2) sleep problems as measured by the ISI. In the first step, covariates were included (i.e., baseline levels of dependent variables along with family income and youth baseline SIQ-Jr). In accordance with a diathesis-stress model, the second step included caregiver mental health history as an indicator of vulnerability to stress. In the third step, we included the additional stressors of youth chronicity (i.e., history of ED visits) and discrepancy between preferred and actual ED disposition (i.e., perceived support from the mental health system). We then examined the interaction between caregivers' mental health history and additional stressors in step 4.

RESULTS

Descriptive Characteristics

Over half of caregivers (57.6%, $n = 68$) reported a history of personal mental health concerns and 14.4% ($n = 17$) had been psychiatrically hospitalized themselves. Of 118 youth, 50% ($n = 59$) had a mental health-related ED visit prior to the index ED visit. Youth reported high levels of suicidal ideation ($M = 75.93$, $SD = 15.89$, [high risk cutoff = 31]). A majority of caregivers reported a preference for inpatient admission (58.5%); however, 24.6% ($n = 29$) of caregivers experienced a discrepancy between their preferred youth ED disposition and recommended disposition (i.e., caregivers either preferred hospitalization and youth were discharged home [11.0%, $n = 13$] or preferred discharge and youth were hospitalized [13.6%, $n = 16$]). Approximately 88% of youth ($n = 69$) had attended an outpatient appointment by the 2-week follow-up.

Aim 1: Course of Caregiver Symptoms

Mean PHQ-4 total scores (caregiver anxiety and depressive symptoms) increased between youths' index ED visit and 2-week follow-up, as did anxiety and depression symptoms when examined separately ($p < .001$). Mean scores on the ISI (sleep problems) also increased significantly ($p < .001$). There was no significant change over time in caregiver negative affect. Notably, caregiver anxiety at follow-up ($M = 3.20$, $SD = 2.09$) exceeded the subscale clinical cut off of three. Figure 1 depicts significant changes in caregivers' symptoms from index ED visit to 2 weeks later.

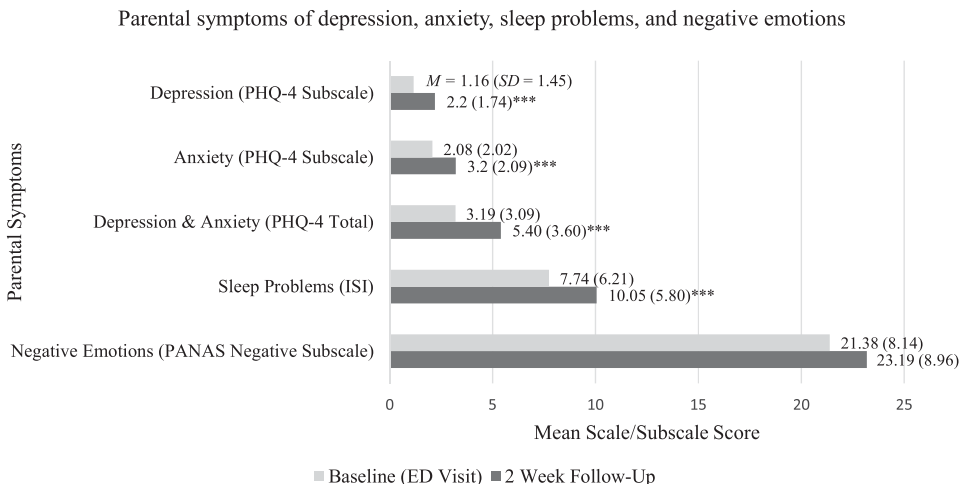


FIGURE 1. Changes in caregiver symptoms of depression, anxiety, sleep problems, and negative emotions from ED visit to 2-week follow-up. Note: Scores range from 0 to 6 for depression and anxiety subscales and 0–12 for total scale. Sleep problem scores range from 0 to 28. Negative emotions scales range from 10 to 50. *** $p < .001$.

Aim 2: Predictors of Caregiver Symptoms

Hierarchical linear regression models examining possible predictors of caregiver anxiety and depressive symptoms and sleep problems at 2 weeks post discharge are depicted in Table 2. Negative affect was not examined as it did not change significantly over time. Caregivers who reported a history of their own mental health concerns experienced more overall anxiety and depressive symptoms at follow-up ($p = .012$). Caregivers whose children had a previous ED visit due to a psychiatric concern experienced higher overall anxiety and depressive symptoms at follow-up ($p = .03$). Discrepancy between the disposition preferred by caregivers and the actual disposition recommended was not related to overall anxiety and depressive symptoms at follow-up. The interactions between caregiver vulnerability and stressors were also not related to overall anxiety and depressive symptoms at follow-up.

With respect to caregiver sleep problems at follow-up, neither caregiver mental health history nor the hypothesized stressors of youth chronicity or disposition discrepancy were significant predictors. The interactions examined between vulnerability and stressors were also not significantly related to caregiver sleep problems at follow-up.

DISCUSSION

Our results indicate that caregivers are experiencing significant increases in symptoms of anxiety, depression, and sleep problems 2 weeks following their child's suicide-related ED visit. It is concerning that after accessing emergency services, the caregivers in our sample reported feeling more worried and distressed, rather than comforted and confident. This finding is important given the responsibility placed on families to support

TABLE 2. Predictors of caregiver symptoms at 2-week follow-up.

	Step 1			Step 2			Step 3			Step 4		
	β	p	R^2	β	p	$R^2 \Delta$	β	p	$R^2 \Delta$	β	p	$R^2 \Delta$
Follow-up caregiver depression and anxiety			.303			+.072			+.070			+.018
Baseline depression and anxiety	.55	<.001	.41	.001	.39	.001	.39	.001	.39	.001	.39	.001
Family income	-.02	.858	.01	.941	.03	.775	-.00	.953	-.00	.953	-.00	.953
Youth suicidal ideation severity	.03	.771	.08	.472	.00	.982	.03	.819	.03	.819	.03	.819
Mental health history	—	—	.31	.012	.31	.010	.49	.008	.49	.008	.49	.008
Disposition discrepancy	—	—	—	—	.16	.115	.27	.102	.27	.102	.27	.102
Youth psychiatric ED history	—	—	—	—	.24	.030	.42	.018	.42	.018	.42	.018
Mental health history* Disposition discrepancy	—	—	—	—	—	—	-.10	.552	-.10	.552	-.10	.552
Caregiver mental health history* Youth psychiatric ED history	—	—	—	—	—	—	-.27	.202	-.27	.202	-.27	.202
Follow-up caregiver sleep problems			.589			+.002			+.014			+.004
Baseline sleep problems	.79	<.001	.77	<.001	.77	<.001	.78	<.001	.78	<.001	.78	<.001
Family income	.20	.023	.20	.022	.21	.018	.20	.033	.20	.033	.20	.033
Youth suicidal ideation severity	.07	.439	.07	.396	.05	.617	.06	.560	.06	.560	.06	.560
Mental health history	—	—	.05	.599	.05	.608	.11	.480	.11	.480	.11	.480
Disposition discrepancy	—	—	—	—	.09	.308	.09	.496	.09	.496	.09	.496
Youth psychiatric ED history	—	—	—	—	.09	.306	.17	.248	.17	.248	.17	.248
Mental health history* Disposition discrepancy	—	—	—	—	—	—	.02	.911	.02	.911	.02	.911
Mental health history* Youth psychiatric ED history	—	—	—	—	—	—	-.13	.470	-.13	.470	-.13	.470

youth safety during a suicide crisis, the demonstrated links between caregiver well-being and youth outcomes (Arbuthnott & Lewis, 2015; Huey et al., 2005), and the promising impact of including caregivers in safety planning interventions (Asarnow et al., 2011). Healthcare systems are not well-equipped to assess or support families during a suicidal crisis nor is it common for healthcare providers to consider caregiver mental health when planning treatment (Grant, Ballard, & Olson-Madden, 2015). Clinicians may benefit from an improved understanding of the responsibilities faced by families to manage their youths' suicidal crises as well as how caregivers' mental health may worsen during this time. Assessing caregiver well-being or capacity may be a useful addition to risk formulation and disposition-planning in emergency settings. Follow-up strategies have been shown to reduce repeat suicide attempts following ED discharge and can be low-resource, feasible interventions for hospital systems (Falcone et al., 2017). Incorporating parental support components may be a promising modification to caring contacts interventions (Czyz et al., 2021). Additional research is needed to better understand the toll of caring for a child at risk for suicide, the possible impact of caregiver-level factors on effective implementation of safety strategies, and the extent to which family interventions in the ED could be useful in maximizing youth safety and support. Future research should also examine caregiver distress among varied youth psychiatric presenting concerns to investigate whether suicide risk may convey its own specific burden on caregivers (Barksdale et al., 2009).

Using a diathesis-stress model framework, this study also examined whether caregiver vulnerability, stress, and the interaction between the two were related to distress symptoms at follow-up. Caregivers' own mental health history and youth suicide risk chronicity predicted elevated caregiver anxiety and depressive symptoms but not sleep problems 2 weeks post ED discharge. Discrepancies between caregiver preference and recommended ED disposition were unrelated to caregiver symptoms at 2 weeks and there was no support for the hypothesized interactions between caregiver mental health history and these additional stressors. Caregiver psychopathology is an established risk factor for adverse events in youth at risk for suicide even following intervention (Huey et al., 2005) and was shown to double risk of suicide attempt one year post hospitalization (King, Kerr, Passarelli, Ewell Foster, & Merchant, 2010). It is noteworthy that over 50% of the caregivers in our sample had their own mental health history. Future research should examine the utility of screening for caregiver mental health history and current symptoms as part of a comprehensive youth suicide risk assessment, especially among youth with chronic suicidality.

Finally, though results did not support a link between preferred and recommended ED disposition and worsening caregiver symptoms, future research should consider the role of health system-related stressors or protective factors (e.g., having established outpatient care, family economic or social resources supporting access to care, quality or personalization of care received in the ED) that may contribute to or ameliorate caregiver distress (Muntaner, Eaton, Miech, & O'Campo, 2004). As demand for children's mental health care continues to outpace available resources (American Academy of Pediatrics, 2021), more caregivers may experience frustration with the health care system. Caregivers may benefit from education on what to expect during and after a suicide-related ED visit as well as intentional efforts to prepare them to manage their child's suicide risk at home with the help of available community crisis supports.

This study has several limitations, including the relatively modest sample size, exclusion criteria that may have omitted subgroups of youth from the study (e.g., those with intoxication or aggressive agitation), a brief follow-up timeframe, reliance on self-report

measures, attrition, and the limited racial, ethnic, and socioeconomic diversity of participants. Families also received care in a psychiatric ED at an academic medical center that is well respected within the community, which may have impacted our findings regarding preferred and recommended ED disposition and may limit generalizability to other care settings. Despite the specialized high quality of care received by families in this sample, it is noteworthy that caregivers continue to experience concerning levels of depressive, anxiety, and sleep problem symptoms after discharge.

Replication of our results are encouraged to ensure generalizability to other communities, general medical as opposed to psychiatric emergency settings, more diverse presentations of youth in crisis, and across caregiver types and different family compositions (e.g., stepparents, foster or adoptive parents, single-parent households, shared custody households).

CONCLUSIONS

In the 2 weeks following an ED visit for their child's suicidal crisis, caregivers reported significant increases in symptoms of depression, anxiety, and sleep problems. Caregivers with their own history of mental health issues and caregivers whose children were experiencing chronic suicide risk were more likely to be experiencing distress. Given that many brief interventions for youth depend on caregiver engagement and support, additional consideration for caregiver mental health and well-being is warranted from both a clinical and a research standpoint.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

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