

BRIEF REPORT

School-Based Psychological Screening in the Aftermath of a Disaster: Are Parents Satisfied and Do Their Children Access Treatment?

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This study investigated parents' satisfaction with postdisaster school-based screening and whether satisfaction was related to follow-through with screening recommendations. From among 1,268 there were 224 children, ages 7–18 years ($M = 10.97$, $SD = 2.44$ years) screened for emotional distress 4 months after a flood and 130 parents who completed the screening evaluation. Of the 44 children who showed severe emotional distress, less than 50% of their parents reported concerns and only 29.5% had sought assistance. Following screening, 86.7% of these children completed treatment. Overall satisfaction ratings by parents were high, with 99.2% very or mostly satisfied.

Following disasters, up to 71% of children report posttraumatic mental health problems (LaGreca, Silverman, Lai, & Jaccard, 2010), yet only 5%–33% access counseling (Geddie Pullins, McCammon, Smith Lamson, Wuensch, & Mega, 2005). Screening is a well-established method of identifying children at risk of psychological problems in primary care (Hacker et al., 2006), emergency departments (Grupp-Phelan, Delgado, & Kelleher, 2007), and school settings (Gould et al., 2009). Research demonstrates the feasibility of conducting large-scale screening after disasters (Geddie Pullins et al., 2005; McDermott, Lee, Judd, & Gibbon, 2005). What is less understood is whether parents follow through with accessing treatment for their children. In a primary care setting, only 17% of parents followed through with accessing an onsite counselor for their children with identified psychological difficulties (Hacker et al., 2006). Similar rates were reported in emergency department settings (Grupp-Phelan et al., 2007). School-based screening appears more successful in engaging families into treatment (Gould et al., 2009). Following postdisaster school-based screening, Jaycox and colleagues (2010) reported children were

more likely to commence (98% vs. 23%) and complete (91% vs. 15%) treatment if they were offered the school-based intervention than the community option. For a screening program to fulfill the ethical imperative that case identification must lead to an intervention, it is important we improve our understanding of factors influencing parental uptake of recommendations.

Given parental consent is required for children to participate in screening and treatment, the success of such initiatives may be influenced by parents' satisfaction. For example, satisfaction with child health services has been associated with intention to attend appointments, duration of treatment, and termination (Day, Michelson, & Hassan, 2011). Some research suggests the relationship between satisfaction with the specific screening program and follow-through with treatment is influenced by parents' beliefs about the seriousness of child symptoms (Gould et al., 2009; Grupp-Phelan et al., 2007), or their agreement with the screening results (Pailler et al., 2009).

In February 2012, several towns in Queensland, Australia experienced record-breaking floods. More than 60% of one township was inundated by flood waters, over 80% of another was evacuated, and there was one life lost.

This study investigated parents' satisfaction with postdisaster school-based screening; whether satisfaction was related to follow-through with screening recommendations; and whether satisfaction and follow-through differed as a function of exposure to flooding, parental concerns about their child's emotional health postdisaster, and child and parent demographic variables.

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Method

Participants and Procedure

School staff provided parents of grade 3–12 students ($N = 1,268$) with an information sheet, consent form, and exposure questions 3 weeks prior to screening, which was conducted 4 months postdisaster. Seven schools were approached and consented to screening. Consent forms were returned for 274 (21.6%) children, with consent to participate provided for 224 (17.7%) children (123 boys, 101 girls) with a mean age of 10.97 years ($SD = 2.44$ years, range = 7–18 years). Screening was followed by daily phone calls over a 2-week period to determine whether parents had concerns about their child, had previously sought help, and agreed to participate in the screening evaluation. One hundred fifty-seven parents consented (198 children); 23 were unable to be contacted.

Parents received one of three child results letters: None/minimal distress, no follow-up recommended; Moderate distress, rescreen in one month with further assessment if symptoms persist; or Severe distress, referral for parent and child diagnostic assessments, followed by treatment if indicated. Following the receipt of screening results, 130 parents (112 mothers, 17 fathers; 168 children, mean age = 10.95 years, $SD = 2.52$ years, range = 7–18 years) completed the evaluation, representing 82.8% of the parents and an overall child response rate of 13.2%. There were no differences between the parents who were recontacted and those who were not in terms of child age ($p = .358$), gender ($p = .476$), or screening results ($p = .189$). The investigation received ethical approval from the Royal Children's Hospital in Brisbane, Australia (HREC/11/QRCH/153).

Measures

The Postdisaster Screening Evaluation was completed by parents and consists of six items assessing satisfaction with screening and three items examining agreement with results, and whether screening provided reassurance about child emotional health, and increased awareness of others' postdisaster emotional functioning (see Table 1). Each item is rated on a 4-point scale from 1 = *low satisfaction* to 4 = *high satisfaction*, with labels specific to particular items. Sample items are, "How satisfied are you with the amount of information you received about your child's emotional health?," and "If a friend was in a similar event to the flood, would you recommend this screening process to him/her?" An overall satisfaction score was obtained by summing the six satisfaction items (range = 6–24), with a requirement that all questions were answered. Cronbach's α for the satisfaction component was .85.

The UCLA Posttraumatic Stress Reaction Index (UCLA PTSD-RI; Steinberg, Brymer, Decker, & Pynoos, 2004) consists of 22 items that measure the severity of posttraumatic stress symptoms (PTSS) over the past month. The frequency of symptom occurrence is rated on a 5-point scale ranging from 0 = *not at all* to 4 = *most of the time*. Total scores are

Table 1
Postdisaster Screening Evaluation Responses and Item Means

Variable	<i>M</i>	<i>SD</i>	Range
Parent ($n = 130$)			
Idea of screening: EGFP	3.52	0.65	2
Idea of school screening: EGFP	3.47	0.55	2
Recommend to friend: YDYNND ^a	3.70	0.49	2
Considered others' reaction: SAADSD ^b	3.24	0.61	3
Child ($n = 130$)			
Okay with child info: VSMSMDVD ^c	3.60	0.55	2
Okay with follow-up advice: VSMSMDVD ^d	3.65	0.53	2
Agree with results?: YDYNND ^e	3.33	0.68	3
Reassured by results?: SAADSD ^f	3.40	0.61	3
Overall satisfaction: VSMSMDVD	3.62	0.51	2

Note. For all items the lowest response = 1, highest = 4. EGFP = excellent, good, fair, poor; YDYNND = yes, definitely; yes, I think so; no, I don't think so; no, definitely not; SAADSD = strongly agree, agree, disagree, strongly disagree; VSMSMDVD = very satisfied, mostly satisfied, mostly dissatisfied, very dissatisfied.

^a $n = 127$. ^b $n = 126$. ^c $n = 165$. ^d $n = 165$. ^e $n = 166$. ^f $n = 164$.

calculated by summing 17 of the items, with higher scores reflecting more severe levels of PTSS (maximum = 68). For the current sample, Cronbach's α was .93 for the total scores.

The Children's Depression Inventory-Short version (CDI-S; Kovacs, 2003) is a 10-item measure of depressive symptoms over the past 2 weeks. Each item consists of three choices corresponding to three levels of symptomatology over the past 2 weeks (0 = *absence of symptom*, 1 = *mild or probable symptom*, 2 = *definite symptom*). Total scores (maximum = 20) are obtained by summing the items. Cronbach's α was .85 for the current sample.

The Spence Children's Anxiety Scale (SCAS; Spence, 1998) consists of 44 items, 38 of which assess the frequency of anxiety symptoms over the past month. The frequency of each anxiety symptom is rated on a 4-point scale from 0 = *never* to 3 = *always*. The 38 anxiety items are summed to provide a total score (maximum = 114), with higher scores reflecting higher levels of anxiety. Cronbach's α was .93 for the current sample for the 38 items.

Data Analysis

Total satisfaction scores were negatively skewed; therefore, a log transformation was applied. Analyses were run on raw and transformed data; given no difference in results, analyses using untransformed data are reported. Bivariate analysis used two-tailed t tests and unequal variance t tests to compare mean values. A Spearman's ρ correlation coefficient was used to index the relationship between child age and satisfaction.

Unequal variance analysis of variance tested group differences in satisfaction. Post hoc comparisons used Games-Howell tests (Toothaker, 1993). Fisher's exact tests examined the relationships between concordance, agreement, and follow-through with screening recommendations. Missing data at the item level were minimal, less than 5%; pairwise deletion was used for cases of missing data.

Results

One third (33.9%, $n = 76$) of children had their home damaged and required temporary accommodation (33.0%, $n = 74$). Approximately 45.1% ($n = 101$) was evacuated and 38.4% ($n = 86$) had experienced a past flood. One quarter (26.8%, $n = 53$) of parents reported concerns about their child following the flood, 10.6% ($n = 21$) sought assistance for their child prior to screening, and 43.4% ($n = 86$) had accessed emotional health information.

The average scores on the screening measures were as follows: PTSD-RI $M = 17.60$, $SD = 13.78$, range = 0–68; CDI-S $M = 49.87$, $SD = 11.24$, range = 39–91; and SCAS $M = 26.03$, $SD = 20.04$, range = 0–87. The scores led to the following distribution in terms of the letters: None or Minimal Distress—62.1% ($n = 139$), Moderate Distress—18.3% ($n = 41$), and Severe Distress—19.6% ($n = 44$). Of those children reporting severe or moderate distress, 47.7% ($n = 21$) and 22.5% ($n = 9$) of surveyed parents, respectively, reported concerns about their children following the flood. Approximately 19% ($n = 22$) of parents reported concerns if their child reported none or minimal distress. Prior to screening, 29.5% ($n = 13$) and 10.0% ($n = 4$) of children reporting severe and moderate distress respectively, had accessed emotional assistance.

Overall, high levels (maximum = 24) of satisfaction were reported with 99.2% of parents either very or mostly satisfied overall. The mean score for the total satisfaction items was 21.55 ($SD = 2.49$, range = 14–24). Parental satisfaction did not differ according to child gender—girls: $M = 21.61$, $SD = 2.47$; boys $M = 21.49$, $SD = 2.51$; $t(160) = 0.30$, non-significant [*ns*]; parent gender: mothers $M = 21.54$, $SD = 2.51$; fathers $M = 21.76$, $SD = 2.33$; $t(154) = .73$, *ns*; or child age ($r_s = .02$, *ns*). There were no differences in satisfaction if children were evacuated ($M = 21.36$, $SD = 2.42$) or not ($M = 21.62$, $SD = 2.55$); $t(155) = 0.66$, *ns*; if their home was damaged during the flood ($M = 21.59$, $SD = 2.44$) or not ($M = 21.45$, $SD = 2.53$); $t(155) = .35$, *ns*; if children required temporary accommodation ($M = 21.67$, $SD = 2.59$) or not ($M = 21.20$, $SD = 2.28$); $t(155) = 1.12$, *ns*; or if children had been affected by a previous flood ($M = 21.49$, $SD = 2.55$) or had not ($M = 21.68$, $SD = 2.44$); $t(146) = 0.47$, *ns*. Satisfaction ratings were similar if parents had accessed emotional health information following the flood ($M = 21.40$, $SD = 2.32$) or had not ($M = 21.65$, $SD = 2.48$), $t(158) = 1.42$, *ns*; and if parents had sought emotional help for their child ($M = 20.78$, $SD = 2.44$) or had not ($M = 21.65$, $SD = 2.48$), $t(158) = 1.42$, *ns*. There were no differences in satisfaction with screening if parents had

concerns ($M = 21.50$, $SD = 2.10$) or did not have concerns about their children following the flood ($M = 21.57$, $SD = 2.63$), $t(160) = 0.15$, *ns*.

An unequal variance *F* test revealed (Parra-Frutos, 2013) differences in parental satisfaction according to screening results letters, $F(2, 66) = 6.83$, $p = .002$. Post hoc comparisons showed parents were more satisfied if their children received a None or Minimal Distress letter ($M = 22.20$, $SD = 2.05$) than a Moderate Distress ($M = 20.43$, $SD = 3.17$, $d = 0.66$) or Severe Distress letter ($M = 21.08$, $SD = 2.30$, $d = 0.52$), with no differences between these groups. If parental concerns and child results were concordant, parents were more satisfied ($M = 22.12$, $SD = 1.97$) than if they were discordant ($M = 20.65$, $SD = 2.93$); $t(160) = -3.82$, $p < .001$, $d = 0.59$. Similarly, parents were more satisfied with screening if they subsequently agreed with the screening results ($M = 21.77$, $SD = 2.21$) than if they disagreed ($M = 18.83$, $SD = 4.00$); $t(11.54) = -2.51$, $p = .028$, $d = 0.91$.

Of the 44 children reporting severe symptoms, consent was provided for 37 (84.1%) to participate in the diagnostic assessment, with 35 (79.5%) completing this. Screening satisfaction was unrelated to whether children completed the diagnostic assessment ($M = 21.33$, $SD = 1.92$) or not ($M = 19.67$, $SD = 3.72$), $t(5.49) = -1.07$, *ns*. Similarly, concordance between prescreening parental concerns and child screening results was unrelated to follow-through with assessment ($p = .486$). Nevertheless, 94.4% ($n = 32$) of parents who agreed with their child's screening results followed through with a diagnostic assessment, compared to 33.3% ($n = 1$) of those who disagreed with the results ($p = .023$). Following the assessments, 86.7% ($n = 26$) of children with severe symptoms completed treatment (13.3% were lost to follow-up).

Discussion

Approximately 22% of children scored within the severe range for posttraumatic mental health symptoms, yet less than 50% of these parents reported concerns and only 29.5% had sought assistance. This finding is consistent with reports that few children access counseling postdisaster (Geddie Pullins et al., 2005). Following screening, 79.5% of children who scored within the clinical range followed through with a diagnostic interview and 86.7% of these children completed treatment.

High levels of parent satisfaction were revealed; 99.2% of all parents were either very or mostly satisfied overall and almost all parents were satisfied with the amount of information they received, the follow-up recommendations, and school setting. Higher levels of satisfaction were reported among parents of children with nonclinical symptoms, and those with concordant concerns and child-reported symptoms ($d = 0.59$). However, the actual difference in scores was not great with parents still very satisfied if their concerns and child-reported symptoms were discordant. Screening satisfaction was unrelated to follow-through with treatment; however, consistent

with previous research (Gould et al., 2009), parents were more likely to follow-through if they agreed with their child's screening results. Such results emphasize the importance of parental buy-in.

Limitations include the parents who consented are a self-selected group, limiting the generalizability of the findings. Participation in this study was lower than other Australian initiatives (McDermott et al., 2005), possibly due to community isolation, their own construction of self-reliance, possibly lower levels of mental health literacy, and previous flood exposure. The screening battery focused on child-reported internalising symptoms; externalising symptoms were not assessed. This may have influenced satisfaction, agreement, and follow-through as parents are more accurate in identifying externalising symptoms. Finally, the lack of a control group who were not screened, but for whom mental health service use information was available prevents the study isolating the effect of screening on access to treatment.

Despite these limitations, the current findings indicate parents were highly satisfied with a school-based screening program in the aftermath of a disaster. The majority of these children were not identified by their parents, yet successfully accessed treatment if this was recommended. Additional studies are needed examining the effectiveness of screening in identifying children with emotional distress and engaging them into treatment, and factors influencing screening participation.

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