

Picture Books and Reading Aloud to Support Children after a Natural Disaster: An Exploratory Study

ABSTRACT: *Picture books have been used after disasters to support children's recovery, without*

books are symbolic links to education and school. As such, they serve as reminders of the everyday activities that provide structure in children's lives, suggesting an optimistic future of safety and accomplishment, and may assist in children's educational recovery after disasters (Olness, Sinha, Herran, Cheren, & Pairojkul, 2005; Peek & Richardson, 2010).

For these reasons, it is reasonable to expect that picture books might be helpful to children exposed to the extreme stresses that accompany war and natural disasters. Picture books have been

For children less than 6 years of age, the respondents were the parents. Children 6 and older were interviewed directly, with help from their parents as needed. The interview included basic demographics, descriptions of the nature of the losses incurred as a result of the typhoon, and descriptions of the child's experience in the immediate aftermath, including symptoms of stress. Stress symptoms were elicited through multiple yes/no questions, for example, respondents were asked if the child had experienced any of 8 reactions including, e.g., nightmares, loss of appetite, extreme fears, loss of concentration, and "other." Recall of the intervention was ascertained in two ways. First, respondents were given an open-ended question asking about help they received after the typhoon. The response was scored positive for "un-prompted recall" if it mentioned having gotten a book at the intervention session. Second, respondents who had not demonstrated un-prompted recall were asked directly if they recalled having gone to a session 2 months after the typhoon in which doctors talked about reading aloud

question were scored positive for "prompted recall". Respondents were also asked to describe how the book-based intervention had been useful to them. The interview concluded with the 8 questions comprising the CRIES-8, a widely-used measure of PTSD-related symptoms (Deeba, Rapee, & Prvan, 2014).

Data analysis: In order to gauge the severity of losses experienced, an index of "injury severity" was created using the following formula: 2 points for injury to the child, plus 1 point for injury to a parent(s), plus ½ point for injury to a sibling or other relative. A similar formula was used to quantify deaths: 2 points for death of a parent (no child lost both parents), plus 1 point for death of a sibling(s), plus ½ point for death of other relative(s) or friend(s). As a measure of the intensity of the child's immediate response to the trauma, each stress symptom was given a value of 1, and the

book had been last used by the parent or child was created using the following formula: 4 points for last use in the previous week, 3 points for last use in the past month, 2 points for last use in the past 6 months, and 1 point for use within the past year. Responses to open-ended questions about how the books had been helpful were recorded by the interviewer, and later grouped according to common themes (Flick, 2019).

CRIES-8 scores were treated both as a continuous variable, and as a dichotomous variable using a cutoff score of 17 following Perrin, et al. (Perrin, Meiser-Stedman, & Smith, 2005). Data cleaning resulted in 18 CRIES-8 scores being discarded because of coding irregularities. Analyses included descriptive statistics, ANOVA and multiple linear regressions. All analyses were done using SPSS version 25.

RESULTS

sessions, 256 of whom provided contact information. At follow-up 13 months later, 113 interviews were completed (57% of the original 256). Table 1 presents demographic data.

For the most part, the families were working class. Of those parents who provided an education level, roughly 50% endorsed high school, 30% elementary school, and 20% college. Some of the more common job descriptions included housewife, pedicab

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received in the immediate post-storm period (i.e., “unprompted recall”). In response to a direct question, another 50 (44%) recalled having taken a book. When asked, “Did the book make you/your

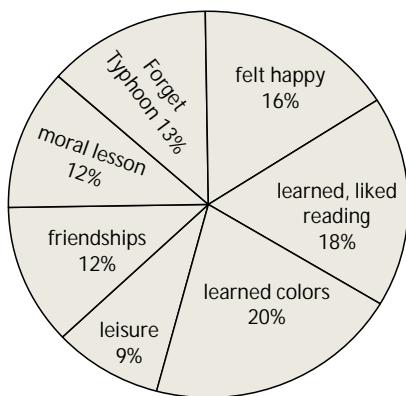
months later, 64 (57.5%) reported that they still possessed the book; 29 (26%) reported that they had looked at the book within the past year; 22 (20%) within the past 6 months; 14 (12%) within the past 1 month; and 36 (32%) within the past week. Of the 48 children who did not still have their book, in 25 (52 %) the book was reported to have been destroyed in a subsequent typhoon (Typhoon Ruby); in 19% the books had been destroyed by another person; in 8% they had been given away to a relative or friend; and in 21% they had been lost or stolen.

Parents and children told of various ways the books had helped them (Figure 2). Two main themes emerged from these responses: learning, and comfort/happiness. For younger children, 16% of the parents believed that reading aloud made their children happy, and

forget the typhoon. Among the older children, 48% reported that the picture books made them feel happier or “better,” and

typhoon. (The percentages sum to >100% because respondents often gave multiple reasons.) Table 3 presents representative quotations from parents and children, some translated from the Filipino language.

On the CRIES-8, 24 (21%) of the children scored in the clinical



Examples of Parents' Responses, as Transcribed	Theme	Number of Statements (%)
Provided leisure; Encouraged to stay at home	leisure	6 (9)
Bonding of/with kids; Building interpersonal relationships	friendships	8 (12)
Learned a moral lesson	moral lesson	8 (12)
Helped forget typhoon events; Appease child when crying; Gave peace of mind	forget Yolanda	9 (13)
Feel Happy/enjoyment/makes child laugh	felt happy	11 (16)
Learned/encouraged to read; Able to memorize a local song; Liked reading the story/looking at pictures; Able to relate to book/character	learned, liked reading	12 (18)
Learned to identify pictures/colors	learned colors	14 (21)

Figure 2. Parents explanations of how the books helped their children, below age 6

Table3. Representative quotations from parents and children, some translated from the Filipino language

It helped the child by way of forgetting some bad memories. (Mother of 5 yr old/female)
(The book) alleviated the children's fears. It provided them leisure. My daughter became sad when her book got wet by the recent storm. (Mother of a 5 yr old/female)
(The book) relieved her of her trauma. (Mother of a 5 yr old/female)
She was happy and forgot about the loss of their house, death of her aunt and of strong winds and waves. (9 yr old/female)
The child feels happy about the book and his parents would read it before he goes to sleep. (9 yr old/male)
The book made me feel better (at ease). (15 yr old/female)
The child told the story of the book, how the character after the war planted again. The child loves plants so the book made her thinking to plant again. (10 yr old/female)
The child learned to take care of the environment, appreciate

(i.e. PTSD) range. In univariate analyses, the CRIES-8 total score was associated with the total number of immediate stress symptoms (Pearson $r=.429$, $p<.001$), and with the town (ANOVA $F=3.4$, $p<.04$); but not with our summed index of injury, death and property loss ($r=.17$, ns). Among the 53 subjects with unprompted recall of the book, 30% reported CRIES-8 scores in the clinical range, compared to 13% of the 60 subjects who did not have unprompted recall. There was also an association between CRIES-8 score and our index of recent book use: the more recent the book use, the higher the CRIES-8 score ($F=3.6$, $p<.02$). In a categorical analysis, 30% of children who were reported to have used the book within the past month reported CRIES-8 scores at or above 17 (i.e., in the clinical range) compared with 14% of 51 children who had not used the book as recently (chi-sq 3.9, $p<.05$).

In a multiple linear regression analysis controlling for town, child sex, extent of reported losses, severity of initial stress symptoms, un-prompted recall of the book, and recent book use, only initial stress symptoms and recent book use remained significant predictors of CRIES-8 score (beta =2.0, $p<.001$; and beta =1.26, $p<.023$, respectively).

DISCUSSION

has evaluated the use of picture-books and training in reading aloud as an adjunct to other supports provided immediately following a natural disaster. The intervention was modeled after Reach Out and Read (ROR),

implemented as part of the Outpatient Services in several hospitals in the Philippines, and thus was familiar to the team of doctors who carried out the intervention. The central components of ROR are expert advice, modeling of developmentally appropriate reading aloud, and provision of developmentally and culturally appropriate picture books at each health supervision visit beginning in infancy.

in promoting language development and positive reading aloud interactions within families challenged by educational and social disadvantage (R. D. Needlman, Dreyer, Klass, & Mendelsohn, 2019; R. Needlman & Silverstein, 2004; R. Needlman, Toker, Dreyer, Klass, & Mendelsohn, 2005; Zuckerman & Augustyn, 2011).

The current study adds to the existing body of evidence by demonstrating long-term outcomes of a ROR-like intervention in

REFERENCES