

Short report:

Can children predict their own psychological recovery after injury?

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ABSTRACT

While children's voice is core to paediatric care, their *own* assessment of future psychological needs is under-explored. We conducted a prospective observational study among children hospitalized for injury in Melbourne, Australia. Their expectations of psychological recovery at baseline (in-hospital) were significant and substantial predictors of their quality of life and post-traumatic stress 6 weeks later, suggesting potential diagnostic value.

What is known about this topic:

- Screening measures for risk of mental ill-health after trauma rely on assessment of children's acute stress or risk markers and have only been moderately successful
- Children's own prediction of their psychological recovery has been absent from screening efforts

What this study adds:

- Children's expectation of psychological recovery predicts their subsequent well-being and post-traumatic stress
- Including children's voice in paediatric care not only aligns with the Convention on the Rights of the Child but also has promise for diagnostic assessment

INTRODUCTION

Accurately identifying children in need of psychological support after serious injury is a critical diagnostic challenge. Current screening measures rely on the assessment of children's acute stress symptoms or risk markers.¹ Despite significant progress in diagnostic efficiency, these methods yield imperfect and sometimes conflicting results.² A surprisingly under-explored approach to improve predictions is to explicitly solicit children's own expectations of their psychological recovery. We investigated whether children's expectations of psychological recovery are related to their subsequent a) health-related quality of life, hypothesizing a positive relation, and b) post-traumatic stress symptoms, hypothesizing a negative relation.

METHODS

The current analysis is part of the Ear for Recovery project, a prospective, observational study of children who were hospitalized at the Royal Children's Hospital Melbourne.³ Ethics approval was granted by the hospital's Human Research Ethics Committee (#33103). We obtained written informed consent from all families involved. Participants were 55 children (33 males, 22 females) aged 8-16 years old ($M = 12.04$, $SD = 2.46$). Injuries sustained by the children were due to traffic accidents (33%), falls (13%), sports/recreational activities (45%), or other causes (9%), requiring at least 24 hours of hospitalization. The children's injury severity score (ISS) ranged from 1 to 30 ($M = 8.47$, $SD = 7.32$) and they were hospitalized up to 17 days ($M = 3.67$, $SD = 3.23$).

In-hospital, children indicated on a visual analogue scale how happy they thought they would be in a month's time (we chose the reference to happiness rather than psychological recovery to allow a single question that was understandable for all ages). At 6 weeks post-injury, we conducted phone interviews with the children to assess their quality of

life via the KIDSCREEN-27⁵ and post-traumatic stress via the Children's Revised Impact of Event Scale⁴, initially, or the Child PTSD Symptom Scale⁶, after a change in protocol. We derived uniform indications of children's experiences by calculating Percentage of Maximum Possible scores (POMP, e.g. a score of 100 indicated maximum expected happiness, quality of life or post-traumatic stress, respectively)⁷. To assess the relation between children's expectations on the one hand and their eventual quality of life and post-traumatic stress on the other, we computed Pearson correlations with bootstrapped bias corrected 95% confidence intervals (10,000 samples) to address the variables' positive skew, in SPSS version 25.

RESULTS

Of the 55 children who predicted their psychological recovery in-hospital, 38 children (69%) had relevant follow-up data. There were no significant differences in age, injury severity, duration of hospitalization or child prediction between those with and without follow-up. The more children expected to recover, as measured in-hospital, the higher was their quality of life six weeks later. This was a significant and substantial correlation ($r = .39$; with a 95% bootstrapped BCa confidence interval ranging from .09 to .68). In turn, children's prediction at baseline was significantly and negatively associated to their post-traumatic stress levels at 6 weeks post-injury. In other words, the more they expected to recover, the lower their stress levels at follow-up ($r = -.52$; with a 95% bootstrapped BCa confidence interval ranging from -.79 to -.07; see also Table 1 and Figure 1).

DISCUSSION

These findings identify children's own expectations of psychological recovery from trauma as a potential diagnostic asset rather than a liability, and suggest that children should

be taken seriously as key informants when it comes to gauging psychological recovery trajectories and professional support needs. The correlations with both quality of life and post-traumatic stress suggest that children's own assessment of their future needs is an overlooked area of diagnostic importance. Due to the small sample and the skewed nature of the variable distributions, our bootstrapped confidence intervals were wide; the actual size of the associations and children's unique contributions will need to be estimated with higher statistical precision in larger samples. It would also be valuable to obtain more in-depth assessments of children's expectations. From a children's rights perspective it is ethically important for children's voices to be heard in health care (see the UN Convention on the Rights of the Child⁸); our findings add empirical weight to the need to do so.

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Figure 1. Scatterplots of Associations with Children's Predictions

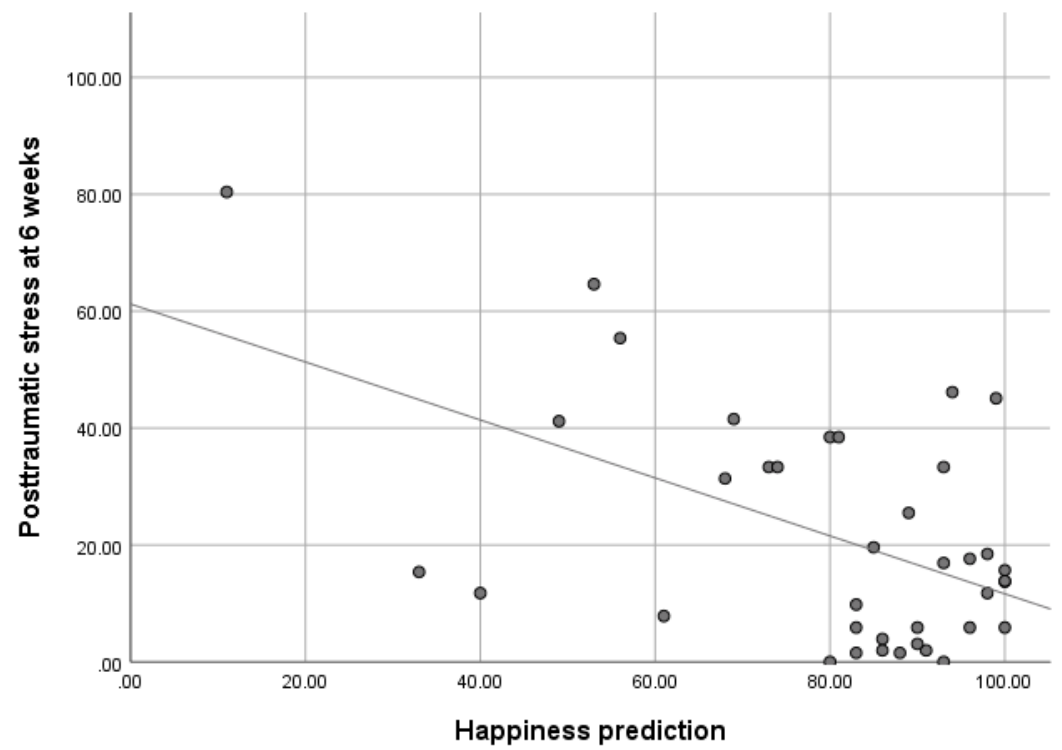
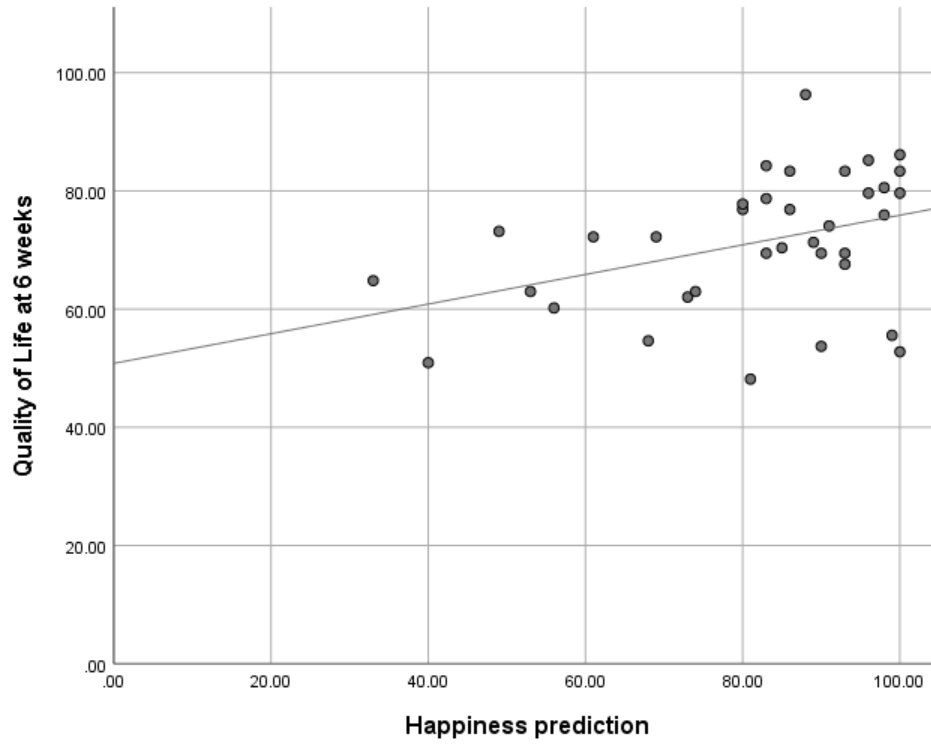


Table 1. Descriptives and Correlations for Children's Happiness Prediction with subsequent Post-traumatic Stress and Quality of Life

	<i>M (SD)</i>	Correlation with happiness prediction at baseline ^a
Happiness prediction at baseline ^b	80.05 (20.77)	-
Quality of life at 6 weeks ^c	71.27 (11.47)	.39* [.09; .68]
Post-traumatic stress at 6 weeks ^d	21.53 (19.73)	-.52* [-.79; -.07]

^a Pearson correlation with bootstrapped BCa 95% confidence interval; ^b Happiness prediction as percentage of maximum possible score; ^c KIDSCREEN-27 percentage of maximum possible score; ^d Children's Revised Impact of Event Scale or Child PTSD Symptom Scale percent; * $p < .05$; ** $p < .01$; $N = 38$.