



Resilience-promoting factors for parents of severely injured children during the acute hospitalisation period: A qualitative inquiry

Kim Foster^{a,b,*}, Rebecca Mitchell^d, Alexandra Young^c, Connie Van^c, Kate Curtis^{c,d,e,f,g}

^a Australian Catholic University, School of Nursing, Midwifery & Paramedicine, 115 Victoria Parade, Fitzroy, Victoria, 3065, Australia

^b Northwestern Mental Health, Melbourne Health, Grattan Street, Parkville, Victoria, 3050, Australia

^c Susan Wakil School of Nursing and Midwifery, Sydney Nursing School, Faculty of Health and Medicine, The University of Sydney, 88 Mallett Street, Camperdown NSW 2006, Australia

^d Australian Institute of Health Innovation, Macquarie University, Level 6, 75 Talavera Road, Macquarie University NSW 2109, Australia

^e Illawarra Shoalhaven Local Health District, Wollongong Hospital, Loftus Street, Wollongong NSW 2500, Australia

^f Illawarra Health and Medical Research Institute, Building 32, University of Wollongong, Northfields Avenue, Wollongong NSW 2522, Australia

^g The George Institute for Global Health, Level 5, 1 King Street, Newtown NSW 2042, Australia

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ABSTRACT

Background: Paediatric injury impacts the entire family. Many parents experience stress and anxiety following paediatric injury, but little is known about factors that support parents' wellbeing and how they successfully manage the adversity of child injury during acute hospitalisation.

Aim: To explore parent experiences and resilience-promoting factors that facilitate the wellbeing of parents with severely injured children during the acute hospitalisation period.

Methods: A qualitative inquiry conducted across four major Australian paediatric trauma services. Semi-structured interviews were conducted with a purposive sample of 40 parents of 30 severely injured children aged 0–12 years during the acute post-injury hospitalisation period. Interviews explored parents' experiences and how parents had managed the stress of their child's injury during the acute hospitalisation period. Data were analysed using directed content analysis.

Results: Parents identified a range of individual characteristics and resources, and those of their children and families, communities, and the hospital environment, which facilitated their wellbeing during the initial post-injury period. Three themes were derived from analysis: Drawing on inner strengths; Having positive and supportive relationships; Being in a safe place with the right help.

Conclusion: Resilience-promoting factors for parents of injured children can be used to inform development of brief online intervention modules to enhance parent resilience. Routine screening and targeted psychological first aid for parental distress are recommended.

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Introduction

Unintentional childhood injury is a leading global cause of child hospitalisation and disability and the resulting disabilities can have a long-lasting impact on all facets of children's lives, including their emotional and physical health, relationships, learning and play [1]. While many parents experience psychological distress following their child's injury, little is known about parents' resilience and how they successfully manage the adversity of child injury during acute hospitalisation.

Individuals, regardless of age, rely heavily on family members to assist them through the experience of life-threatening injury [2]. Children are especially dependent on their parents to meet their physical, emotional, and social needs following injury. If parents have reduced capacity to meet the requirements of their severely injured child, the physical and psychological adjustment of the injured child [3,4], and the wellbeing of the entire family unit, can be threatened [5–7]. There is substantial international evidence that demonstrates parents with severely injured children are at risk of psychological distress [4,6,8]. Findings indicate 20–40% of parents are at risk of developing depression or anxiety after a child's injury [9] and up to 47% of parents develop post-traumatic stress disorder (PTSD) [6,10–12].

While the literature highlights the adversity and risk of poor psychological outcomes for parents of injured children [13–15], the concept of resilience provides a strengths-based explanatory lens

* Corresponding author at: Mental Health Nursing Research Unit, Australian Catholic University & NorthWestern Mental Health, Level 1 North, City Campus, The Royal Melbourne Hospital, Grattan Street, Parkville, Victoria, 3050, Australia.

E-mail address: Kim.Foster@acu.edu.au (K. Foster).

for understanding how parents can not only survive the experience, but positively adapt and emerge stronger from the adversity of their child's injury. Resilience has been variously defined and is an evolving theoretical construct that has been conceptualised as a trait, process, or outcome [16]. Recent understandings of personal resilience explain it as a psychological construct [17], comprising a dynamic *process of positive adaptation* (e.g. psychological wellbeing and health) to *adversity*. This process involves interaction between the individual's psychological characteristics and coping strategies, and the nature of the adversity or risk [16].

Key resilience protective factors and processes identified in the literature include positive relationships and social support, problem-solving skills, meaning-making (including sense of coherence), self-agency and mastery, emotional and behavioural self-regulation, and cultural traditions including religion [18]. A social ecological resilience perspective emphasises the *individual's* capacity to navigate their way to resources that sustain their wellbeing, and the capacity of their *family, community and environment* to provide these health-sustaining resources [19]. Importantly, these perspectives on resilience highlight the potential to strengthen the interaction between individuals and their environment, modify risk and protective processes, and provide resources that can support positive adaptation and wellbeing for parents and families in the face of child injury.

There have been several studies on the resilience of adults who have experienced injury or chronic pain [20–22]. Studies have also reported on resilience in families where a family member has a chronic condition or injury [23–25]. There are few studies, however, that have investigated parental resilience following child injury. One Australian study with 63 parents of childhood burn survivors [26] measured parent resilience, impact of events, mental health and early predictors of PTSD. Although parents reported significant psychological stress and lower than average resilience, the reasons for these were not explored [26]. Another Australian study [27] investigated the psychological responses of 189 parents to their child's injuries over a two year period. From analysis of quantitative findings three parental post-traumatic stress symptom trajectory groups were identified: the resilient group (78% - well below clinical level values of post-traumatic stress), the recovery group (8% - clinical level acute symptoms which by 6 months had declined to below clinical level), and the chronic subclinical group (14%). Resilience as an outcome, however, was not directly measured.

To address the lack of understanding of resilience and factors promoting resilience of parents of injured children, the current study focused on parental resilience in the context of severe child injury. This was for the purpose of better understanding the factors promoting resilience in these circumstances and to inform future targeted care provision to promote wellbeing and positive outcomes for these parents and families. The aim of this qualitative inquiry was to explore parents' experiences and resilience-promoting factors that facilitated parental wellbeing following child injury. Research questions were:

- 1) What are parents' experiences of dealing with the adversity of severe child injury in the initial acute hospitalisation period?
- 2) What factors and processes are reported by parents of severely injured children to facilitate their wellbeing?

Methods

Study design

This study forms part of a prospective longitudinal study investigating the experiences, support needs, and outcomes of

parents of severely injured children 0–12 years over the two-year period following child injury [28]. A qualitative approach was used to explore the phenomenon of resilience-promoting factors for parents. This naturalistic form of inquiry explored a real-life situation, was conducted in a natural setting, and employed purposive sampling [29].

Study setting

Parent participant recruitment occurred in four major pediatric trauma services for children in Australia. The study was approved by the relevant ethics committees at the respective hospital sites in each State: HREC/13/SCHN/404; HREC/14/QRCH/149; and 34089 A.

Participants

A purposive sample of parents with severely injured children was sought. Eligible parents were those who were aged over 18 years of age, able to speak, read and write English, and who had a recently severely injured and hospitalised child 0–12 years with an Injury Severity Score (ISS) > 15 [30] or requiring admission to the Intensive Care Unit (ICU). Potential parent participants were identified by Trauma Coordinators at each site during clinical rounds who then approached the clinical team to discuss whether the parent met study criteria (e.g. had a child with ISS > 15 who were likely to survive their injuries) and were not already involved in a concurrent study at the hospital. Parents were screened, informed of the study and invited to participate. Participants provided written informed consent.

Data collection

Parent contact details were provided by the site Trauma Coordinator to the Study Coordinator, who contacted parents and interviewed them (separately if both parents participated) at a mutually convenient time in a private room at the hospital. The Study Coordinator was trained in research techniques for interacting with potentially distressed participants and followed a protocol for providing relevant emotional support and follow-up services if needed. Face-to-face semi-structured interviews lasted up to 60 min, with an average of 37 min. Data saturation was reached by 40 interviews, when no new information on the phenomenon was being gathered in the final few interviews conducted [29].

Interviews were audio-recorded and conducted by CV, who was trained in interview technique, with 40 parents of 30 severely injured children, using an interview guide developed from the literature. In the acute hospitalization period, interviews explored parents' experience of having an injured child, and the personal and contextual factors they found helpful for their wellbeing. Parents were asked questions, with prompts, such as: 'What have been the most difficult aspects of your child's injury?'; 'What have been your needs?'; 'What has been helpful in meeting your needs?'. Field notes were taken prior to and following interviews.

Data analysis

Interview data were transcribed verbatim and analysed using directed qualitative content analysis methods. This analytic approach starts with a theory to guide initial coding and key concepts, and is used to extend a theory and related concepts [32]. In this case, a social-ecological conceptual framework (personal/family/environment) of resilience was used to explore resilience-promoting factors and processes for parents of severely injured children. In the initial or first level coding, this framework was used to identify and group factors in all interviews; i.e. personal, family,

and community and hospital (i.e. environment), that promoted parents' resilience. The QSR International software, NVIVO 10, was used to manage data. Interview responses were initially coded using this framework by AY and then in the next level of analysis, in an iterative process the codes and related key concepts were reviewed and discussed by AY and KF until consensus was reached, and concepts were grouped to form emerging and then final themes. The resilience-promoting factors identified in the initial coding are presented in Table 3. The final themes are reported below.

Results

Demographics

A total of 40 parents of 30 injured children consented to participate. Two families had two severely injured children (Table 1).

At baseline, there were 30 children aged ≤ 12 years hospitalised with an ISS > 15 and/or admitted to an ICU. The mean age at admission was 7.4 years (SD 4.0). Sixteen children (53.3%) were female and almost all children (93.3%) were born in Australia. Nearly three-quarters of the children (73.3%) were involved in transport-related incidents and falls accounted for 10% of injuries, ranging from 2.5 to 12 m in height. The mean ISS was 22.3 (SD 9.4) and median hospital LOS was 18.0 days (IQR 10.0–66.0). There were 24 children (80.0%) admitted to ICU (Table 2).

Three themes were identified from analysis: 1) Drawing on inner strengths; 2) Having positive and supportive relationships; and 3) Being in a safe place with the right help. Parents identified a range of personal characteristics and resources, and those of their

Table 1
Parent demographics.

Characteristic	
Gender (n = 40)	
Male	14 (35%)
Female	26 (65%)
Age (n = 40)	
Age range male	24 – 53 years
Mean age male	42.1 years
Age range female	25 – 51 years
Mean age female	39.4 years
Marital status (n = 35)	
Single	3 (9%)
Partnered or married	28 (80%)
Separated or divorced	4 (11%)
Number of dependent children (under 18 years) (n = 35)	
1	8 (23%)
2	13 (37%)
3	10 (29%)
4	4 (11%)
Country of birth (n = 35)	
Australia	28 (80%)
Other country	7 (20%)
Level of highest education (n = 35)	
Some high school	2 (6%)
Completed School Certificate	3 (9%)
Completed High School Certificate	3 (9%)
College/TAFE	12 (34%)
University	15 (43%)
Employment (n = 35)	
None	9 (26%)
Paid employment	26 (74%)
Gross weekly household income (n = 35)	
Nil household income	1 (3%)
\$1 - \$649	4 (11%)
\$650 - \$1699	18 (51%)
\$1700 - \$3999	11 (31%)
Income not given	1 (3%)

Table 2
Child demographics.

Characteristic	
Girls	14 (47%)
Boys	16 (53%)
Country of birth:	
Australia	29 (97%)
Other	1 (3%)
Australian state of residence:	
NSW	7 (23%)
Victoria	10 (33%)
Queensland	13 (43%)
Age range of children	1 – 12 years (Mean 7.4; SD 4)
Range of Injury Severity Score (ISS)	4 – 50 (Mean 23; SD 9.4)
*Median number of days in ICU (IQR)	2 (1–7)
Median number of days in hospital (IQR)	18 (10–68)
Mechanisms of Injury:	
Motor vehicle collisions	
Motor vehicle passengers	11
Pedestrian versus car	5
Scooter/pedal bike	2
Scooter hit by car	1
Motorbike hit by car	1
Pedal cyclist versus car	1
Pedestrian versus motorcycle	1
Falls	
Roof	2
Ladder or bench	2
Other	
Kicked by horse	1
Go kart incident	1
Burn	1

* n = 24.

children and families, communities and the hospital environment, which promoted their resilience and wellbeing during the initial post-injury period (Table 3).

Drawing on inner strengths

Parents revealed a number of personal characteristics and resources they used to cope with the intense emotional impact of having a severely injured child. They drew on their inner strength in an attempt to control their own emotions and be strong in front of their child. Most parents believed any emotional reaction to their child's injuries and hospitalisation should occur out of view of the injured child; that they should 'stay positive' because their child could feel their sadness. Many preferred to focus on their child's daily routine, rather than on sadness and negativity surrounding the injury:

'I think you can kind of surprise yourself with what you can deal with. I think there's layers to all of us that we don't probably need to draw on, but there's a lot of strength in yourself and in the people around you.' (Mother, 7 year old girl, motor vehicle collision (MVC))

Some parents, including those with more severely injured children, adopted a positive outlook in relation to how they integrated the injury and its impact into their lives. They consciously focussed on the positives and on maintaining a healthy outlook, rather than becoming preoccupied with unhappiness and blame about the circumstances surrounding their child's injuries. All parents felt extremely thankful that their child had survived and some felt 'lucky that we've all come out of it because it could have ended so differently.' (Mother, 7 year old girl, MVC)

Parents focussed on the day-to-day progress of their child, taking every day as it came and embracing any positive changes in their child's progress, however small, with enthusiasm. By maintaining this focus, parents seemed better

Table 3
Parent resilience-promoting factors.

Personal resources & characteristics	<ul style="list-style-type: none"> - Drawing on inner strength - Being hopeful about the future - Spirituality - Expressing feelings - Being flexible - Being proactive - Having a sense of humour - Being patient - Trusting others - Optimistic outlook for child's future - Being reflective on self-coping - Feeling lucky it's not worse - Getting involved in the child's care - Being strong for the child - Taking time out (e.g. being out of child's room, exercise, chatting with other parents) - Focusing on the here and now - Preparing for an uncertain future - Dealing with one thing at a time - Being confident & comfortable to ask questions - Taking charge of situation - Taking things step by step
Family resources & characteristics (partner/s, children, extended family)	<ul style="list-style-type: none"> - Strong supportive relationship with partner - Working together as parents - Child's positive experience of hospital - Child improving physically - Stronger relationship with injured child - Empathic understanding from family - Emotional & practical support from wider family - Supportive siblings of parent &/or child - Knowing family is being cared for - Cohesive family unit
Community/hospital environment resources & characteristics (friends, neighbourhood, healthcare, hospital)	<p>Community</p> <ul style="list-style-type: none"> - Practical support from neighbours (e.g. dropping children at school, cooking, cleaning) - Spiritual support from community - Emotional support from friends <p>Hospital environment</p> <ul style="list-style-type: none"> - Putting faith and trust in treating team - Staff friendly and compassionate (e.g. healthcare professionals, volunteers, ancillary staff) - Respectful communication by staff - Knowing what's going on with child's treatment process - Receiving helpful information - Being included in child's care - Staff treating child as person - Practical needs met (e.g. accommodation, parking, food) - Positive hospital activities (e.g. pet therapy, Starlight room)

able to manage the emotional and physical demands of their child, and to support their child's well-being. Most welcomed the opportunity to become proactively involved in their child's daily care:

'They've [staff] all managed to explain really clearly what they're doing and let us be involved so that we can help too and we don't just have to sit there and feel helpless. Like we're actually in there and doing it with him, which for me is important, cos I'm a doer.' (Mother, 12 year old boy, fall)

Despite the emotional intensity of the hospital experience, some parents had a shared sense of humour with the injured child

and other family members. Seeing the funny side of their situation helped relieve some of the tension associated with their child's injury, making the situation more bearable: *'As much as it's been a hard week, I can't remember the last time we laughed so much as well'* (Mother, 10 & 12 year old girls, MVC). A few parents also drew particular strength from their spirituality, which helped them accept and manage the situation:

'God gives you strength and the love for the family gives you strength.' (Mother, 12 year old boy, motorbike incident)

Having positive and supportive relationships

Most parents drew on emotional support provided by their partner, immediate family and/or extended family. Integral to how parents managed having a severely injured child was a supportive relationship with their partner, and in some cases, ex-partners. Some parents found their child's injury had brought them closer together. These positive relationships provided the basis for parents cooperating together to support their injured child, often resulting in strengthened bonds between the parents, child and family:

'The conversations that we've been able to have with him [child] has bonded all of us. It's galvanised our already strong relationship . . . although at times it's been quite hard, I think everything else just gets thrown out in your world and you really just focus so strongly on the relationship you have with your son and hearing how he's going.' (Father, 12 year old boy, fall/scooter)

Extended family members such as grandparents, siblings, and close friends also provided parents with support. Most parents felt they had been supported by their family and that family members understood the emotional toll their child's injury had taken on their lives. Extended family were seen as pulling together during the crisis to provide the family unit with access to essential practical, emotional and psychological support:

'It's been the family and friends that we've had up here, just sending all their support and you know, they're with you as well. As I said, I might be a dad, but I'm not the only one rowing this way with her you know.' (Father, 7 year old girl, pedestrian vs car)

Family and friends visited the parents and child in hospital and/or interacted with parents via phone, texts and/or social media. Friends not only provided parents with an avenue to share their experiences and concerns for their child, but were often a source of comfort and strength for parents who were helped by knowing there were people behind them. Talking with friends also provided some parents with a sense of normality and time out to talk about what was happening outside the hospital:

In many cases, parents identified that the injury led to them strengthening their relationship with their injured child. This was particularly true for parents with older children *'I probably never spent that much time with her, like a couple of weeks, all day and night'* (Father, 7 year old girl, MVC). Some parents also noted that the crisis of injury had resulted in improved relationships between siblings and the injured child as they realised the severity of the injury and the outcome which could have resulted:

'I think it actually did bring my kids closer together to make them realise how important they actually are to each other 'cos there was that moment there when they thought they'd lost their brother.' (Mother, 9 year old boy, burns)

Many parents were mindful of ensuring all immediate family members were cared for in practical and emotional terms during their injured child's hospitalisation. They acknowledged the impact that their child's injuries had on all family members and

were especially aware that in addition to caring for their injured child, they also needed to ensure that their other children received their attention and love:

'I think a lot of people seem to think this is happening to one child, and the other kids will be resilient but I really think unless you step in and acknowledge that as an adult it's hard on you, so as a child it must be so much harder to process. I think those other children need a secure family environment or they need a secure parent around them.' (Mother, 4 year old girl, MVC)

Being in a safe place with the right help

Following their child's injury, parents were thrust into a hospital environment with unfamiliar staff, routines and protocols, and many were also geographically dislocated from their usual communities of support. Most parents however, appreciated the positive hospital environment and experienced it as being a safe place, characterised by supportive and helpful staff that showed genuine care and empathy. The hospital was described as a *'well-oiled machine'* where everyone worked well together and as a safe place where parents placed their trust in strangers. Parents felt they received good access to information about their child's injuries, and practical support about accommodation and parking. Importantly, this included developing a trusting relationship with their child's treating team, putting their faith and their child's life in their hands:

'One of the worst things that can happen to you has happened to us, but we've been in the best place with the best people to be looked after by. So that takes a massive weight off your shoulders.' (Mother, 7 year old girl, MVC)

Parents found the majority of hospital staff to be friendly, kind and compassionate to them and their children. Some parents noted that staff not only looked after their children, but also looked after their wellbeing, making sure parents got enough sleep and information about their child's progress. Parents also commented on the positive impact of targeted hospital activities, such as the Starlight Room, on their hospitalised child and other children. Most parents felt they were treated in a respectful manner, communicated well with *'amazing'* staff and were confident to ask questions to clarify and improve their understanding of their child's condition, treatment and progress. As one parent noted, *'I'm above and beyond satisfied. I couldn't be more in awe of what they've done to help us and keep us in the loop.'* (Mother, 1 year old boy, pedestrian vs car)

Some parents also highlighted how they appreciated staff treating their child as an individual and how respectful staff were in dealing with, and communicating with, their child:

'One of the things that's been really positive is that they foster relationships with the kids to give them a sense of, this is not just my job, this is something that I care about for you . . . they've actually gotten to know our daughter and her background to try and buy in and develop rapport and trust.' (Father, 10 year old girl, MVC)

Friendships with other parents at the hospital were especially important for the parents who didn't have extended family and friendship networks near the hospital (almost half of parents interviewed lived two or more hours away from the hospital). The shared hospital experience meant parents felt more comfortable discussing their situation with other parents of injured children as they had a shared bond and understanding of the extra-ordinary impact of the injury on everyday family life. Parents also drew support from a range of communities including neighbours, work colleagues, church groups, school communities and local communities, who provided practical help with the daily functioning of

their family outside the hospital. Many parents were amazed by the generosity and spirit of those who had supported them, describing the experience as uplifting and as helping them to endure the situation: *'that's what I think kept us going, having those community people step in'* (Mother, 4 year old girl, MVC). Also important for some parents was the spiritual, practical and emotional support provided by their local religious communities who *'pray, bring me meals, and come and sit with my son'*. (Mother, 12 year old boy, MVC)

Discussion

Resilience is an under-investigated phenomenon in the field of injury and this study adds new knowledge on factors that can promote parent resilience in the context of severe child injury. This is the first study to report on the parental experience of resilience-promoting factors in this parent group. Parents described a range of personal, family, and environmental factors and processes that facilitated their wellbeing, capacity to manage, and to positively adapt the adversity of child injury.

As illustrated by the factors in [Table 3](#), parents drew frequently on a range of *personal resources*, including cognitive (e.g. optimistic outlook for child's future, focusing on the here and now) and emotion-regulation (e.g. expressing feelings) resources to support their wellbeing and that of their children. They demonstrated problem solving, self-efficacy and mastery of their situations through pro-active involvement in their child's care and seeking to clarify and understand their child's injuries and treatment. They also emotionally self-regulated in order to be available to, and present a positive outlook for their injured child and family, including using shared humour to relieve tension. Due to the lack of prior literature on resilience in this parent group no direct comparison of these findings can be made. However, self-efficacy and emotion self-regulation are important cognitive and emotional resilience factors and recognised indicators of positive adaptation following adversity [18]. Families can strengthen their relationships and resilience through processes such as shared humour, and humour therapy has been used as an intervention in paediatric settings, resulting in lowered stress levels in children [33]. This study's findings indicate humour therapy may be a useful adjunct approach during the acute injury period for families with injured children.

Further, parents in this study demonstrated positive meaning-making of their child's injury event and its impact on the child through focusing on positive developments in the child's recovery and intentionally taking a positive outlook for their child's future ([Table 3](#)). Meaning-making is an important personal resilience-promoting factor [18] and an interactive process that is influenced by interpersonal interactions and the environment within which people experience adversity [34]. The *hospital* was a key *environmental resource* for parents in this study, and parents' appraisal of their child's situation was influenced by their interactions with clinicians and by clinicians' communication with them and their child. Clinicians are therefore an important resource who can support parent resilience through targeted interpersonal communication which aims to promote parental meaning-making of the injury event and child's recovery.

In relation to *family resources* ([Table 3](#)), prominent resilience-promoting factors in this study were the positive and supportive relationships parents had with their partners and/or extended family. Many parents also received social support from their *community*. Positive connections and social support are recognised key protective factors that can predict resilience [35] and moderate psychological distress for parents with children with health conditions [36]. Relationships were critical supports for parents in this study during the acute period of child injury and further

investigation is needed into the moderating effects of social support in relation to psychological distress of parents of injured children.

These findings have identified several protective processes that can be supported by clinicians and health services to promote psychosocial wellbeing for parents and strengthen their resilience during the acute phase of child injury. Interventions to build resilience for all parents of injured children, particularly those with potential for lower resilience due to limited personal coping skills and/or lack of social support and external resources, should be considered in respect to the findings on resilience-promoting factors from this study. A tailored intervention for promoting parent resilience can be informed by the resilience-promoting factors identified from the study (see Table 3). There are few targeted parent resilience resources. One program is the Child Illness and Resilience Program (CHiRP) for parents of children with chronic illness. This included routinely administered fact sheets during hospitalisation, as well as targeted booklets and support groups [37]. However, adaptation following acute or single life events such as injury may differ to that of chronic conditions and lead to varying outcomes over time [38]. There is a need for resilience programs that are developed for acute conditions such as injury. While there are emergent reports of online parent interventions for reducing distress in parents of injured children [39], and for preventing children's traumatic stress [40], there are no reported web-based resilience interventions for this parent group. Given the demands on parents during the acute injury hospitalisation period, a freely available brief online module or app, translated into various languages, that parents can access when convenient and which addresses resilience protective factors as identified in this study, is an accessible way to provide resilience resources. In order to support parent wellbeing and take proactive steps to prevent future distress in the initial post-injury period, routine screening for parent psychological distress is recommended. We further recommend preventive psychological interventions are made available for parents as relevant, including psychological first aid. While psychological first aid has been promoted for children following injury [41], we recommend this intervention is extended to their parents.

From a resilience perspective, positive adaptation to adversity means more than the absence of problems or clinical disorders [18], and while a study [27] has identified resilient trajectories for parents of injured children, resilience was defined as being well below clinical levels of psychological distress. For future research, it is recommended that resilient outcomes are measured as the presence of wellbeing as well as an absence of clinical symptoms or psychological distress.

This study is limited to one group of parents in the Australian healthcare context who were English-speaking. The findings may not be transferable to other parent populations. Parents self-selected into the study and it is possible that more resilient parents volunteered which may have influenced the findings. Knowledge of the experiences and resilience outcomes of parents following acute child injury remains extremely limited. As part of this longitudinal study we will continue to track parents' psychosocial wellbeing over a two year period to inform future tailored interventions.

Conclusion

Resilience as defined in this study is a process of positive adaptation to adversity that involves a person's capacity to find their way to resources that sustain their wellbeing, and the capacity of their environment to provide these. The findings on personal, family, and environmental resilience-promoting factors can be used to enhance parent resilience through development of

targeted resilience resources. To support parent, child and family psychosocial wellbeing, clinicians can promote a family-centred model of care delivery for child injury where the needs of all family members, including children and parents, are identified and addressed. Introduction of a designated trauma family care coordinator role in paediatric settings [42] is being trialled as a result of this study.

Author contributions

KF, KC and RM developed the overall concept and design of the study. CV collected the data and AY and KF analysed the data. KF and AY drafted the manuscript and KC, RM, and CV critically revised the manuscript. All authors read and approved the final manuscript.

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