Lower urgency paediatric injuries– parent preferences for Emergency Department or General Practitioner care.

Sarah Gafforini, Erin Turbitt, Gary L. Freed

Abstract

Injuries are a significant proportion of lower urgency (triage category 4 or 5) child presentations to Emergency Departments (ED) in metropolitan Melbourne. A self-administered survey study of 1150 parents of children ≤ 9 years of age attending the ED at one of four Victorian hospitals triaged with a lower urgency condition (triage category 4 or 5) looked at whether children with lower urgency injuries are frequently referred by their GP to ED; and parent preferences for the care of lower urgency child injuries. Parents were recruited by time of day and weekday/weekend. Descriptive and bivariate analyses were performed.

Results

Fewer parents of injured children, compared with illness, attempted to make a GP appointment prior to attending ED (35% vs. 46%; $p < 0.001$). A greater proportion of injured children were referred to ED by their GP than ill children (84% vs. 59%; $p < 0.001$). More parents (53%) preferred ED for the care of child injuries than primary care. Parents who presented to ED with an ill child were more likely to indicate that they have greater trust in ED doctors for the treatment of injuries than primary care doctors (56% vs. 46%; $p = 0.003$).

Conclusion

Treatment provided in the ED for child injuries is valued highly by most parents, with a higher proportion of children with an injury being referred to the ED by their GP. Improving GP treatment skills and training opportunities may reduce GP referrals of lower urgency child injuries to ED.

KEYWORDS

Injury, primary care, general practice, emergency medicine, parents, referral and treatment.

BACKGROUND

Injuries requiring medical care are common in children and are a significant proportion of lower urgency (triage category 4 or 5) child presentations to Emergency Departments (EDs) in Australia.(1) Previous studies have shown a marked increase in ED presentations in Australia over the past two decades, most notably in the age band of children 0-4 years. (2) Injury surveillance data show that approximately 67,650 children attend Victorian Emergency Departments each year for unintentional injuries which do not require hospitalisation (3). It is estimated that for every child that presents to EDs with an injury, 3.3 injured children presented to their GP (4).

Australian GP training programs require a significant focus on the recognition, diagnosis and management of the seriously ill child, with little reference to child injuries common to general practice settings (5). Burn and poison related injuries are given priority in training programs over musculoskeletal injuries which in comparison are increasing in prevalence (6). Overseas literature shows that training in musculoskeletal medicine is generally inadequate and that family doctors have a limited level of comfort in treating injuries in paediatric populations (7).

Anecdotally, it is hypothesised that this may translate into increased GP referrals of lower urgency child injuries to emergency departments and higher rates of parent trust in Emergency Department doctors than their GP for the care of their child's injury.

Parents accompanying their children with a lower urgency injury to ED across four hospitals in metropolitan Melbourne were the subjects of this study. The aim of this project was to assess parent perceptions of their child's lower urgency condition and their preferences for treatment; and whether children with lower urgency injuries presenting to the ED are frequently referred by their general practitioner (GP).

This purpose of this study was to provide a benchmark assessment of parental preferences and experiences regarding the treatment of lower urgency child injuries and the role of GPs in such care. There have been few studies in Australia regarding parental preferences and perceptions of GP care.

METHODS

The data used for this report were collected as part of a larger project to investigate why children present to hospital EDs for lower urgency conditions.

Sample and recruitment

Recruitment took place at three public general hospitals and one specialist children's hospital in metropolitan Melbourne between May – November 2014. The sample consisted of parents or guardians (referred to collectively as 'parents') of children ≤ 9 years of age attending the ED at one of the four study hospitals. Only parents whose child was assigned an Australasian Triage System triage category of 4 or 5 (lower urgency) were included in this analysis. Recruitment was carried out across all time periods including

during work hours (9am to 5pm), evening (5pm to 10pm), evenings (10pm to 9am) and on weekends. Parents with limited English proficiency were ineligible to participate and those who appeared to be in significant distress were not approached.

Survey

The survey was developed based on a review of the existing literature and in consultation with ED directors from all four hospitals. The final version of the instrument included 81 items with branching logic, altering the survey according to responses to specific questions. Responses were provided as single or multiple choice, or on a Likert-scale.

Data collection

Survey responses were collected on an iPad supplied to respondents by research assistants. The data were collected and managed using REDCap electronic data capture tools hosted at The University of Melbourne (8).

Data analysis

Survey question items related to child injuries and the demographic data of parents whose child presented with an injury assigned a lower urgency triage category were analysed for this report. The variables analysed included: GP referrals to ED; parent perceptions regarding where a child with an injury should be taken for care (GP or ED); whether parents trust the doctors in the ED more than GPs to care for their child's injuries; and whether specialist hospital EDs were preferred to other EDs for the treatment of injuries.

Statistical analyses were performed using STATA 13.0 (StataCorp College Station, TX). Frequency and descriptive analyses were initially undertaken to examine the data. Subsequently, bivariate analyses using chi-square statistics were conducted to determine the differences, if any, among respondents based on age of child (<1 year vs. ≥1 year), age of the primary carer (≤30 vs. >30 years), household income (≤\$100K vs. >\$100K), education level of the primary carer, time of day of presentation and hospital location. These analyses also compared parent responses based on whether their child presented with an injury or an illness.

This project received ethics approval from The University of Melbourne and all four hospital Human Research Ethics Committees. Responses provided by parents were confidential, voluntary and anonymous.

RESULTS

Study sample

A total of 1150 parents who accompanied their child to the ED for a lower urgency condition (triage categories 4 or 5) across the four participating hospital ED sites completed the survey. There was random

non-response to some questions so that the N for analyses may differ slightly across variables. Thirty nine parents did not provide a response to whether their child was attending ED with and injury or illness. Surveys were completed so that similar numbers of parents were enrolled in the study across the four different time bands (work hours (9am to 5pm), evening (5pm to 10pm), evenings (10pm to 9am) and on weekends).

With specific regard to those children presenting with injury (N=373), the majority were 1 year of age or older (91%) and were not the first born (54%) (Table 1). Income, education and maternal age were evenly distributed across the sample of injured children and were not related to whether a parent chose to present to ED with an injured or ill child.

When time of presentation was analysed, a smaller proportion of parents presented to ED with a child with an injury during the night (10pm to 9am) compared with other time bands. There were no other significant differences across time bands (table 2).

A smaller proportion of parents whose child had an injury rather than illness (35% vs. 46%; $P<0.001$) attempted to make an appointment with their GP before attending the ED. Injured children were less likely to have attended ED in the past three days than children presenting with an illness (table 3). There were no differences between patients presenting with an injury or illness in terms of having a regular GP or whether the ED was closer to their home than their regular GP clinic.

Of those who attended their GP prior to visiting the ED (N=320 of 1150) a greater proportion of children with an injury rather than an illness (84% vs. 59%; $P<0.001$) were referred by their GP to the ED.

Parent perceptions

In deciding to present to the ED, most (67%) parents of a child with a lower urgency injury reported that the anticipated wait time to see a doctor in the ED was not an important influencing factor. Factors rated by the majority of parents as important or very important in their decision to attend the ED with a lower urgency injury were that the chosen ED was closer to the parent's home than other EDs (81%) and their past experience with the hospital they were attending (68%). The majority of parents presenting with their child having either an injury or an illness perceived their child's condition to be serious (79% vs. 83%; $p=0.1$).

All parents (N=1111), irrespective of the condition with which their child presented (injury or illness) were asked whether they agree or disagree with a number of statements regarding the care of children with injuries. Most parents supported the notion that the ED is the preferred site of care for children with injuries, especially those injuries in which the parents suspect a broken bone or believe stitches may be required. However, parents whose child presented with an illness, (compared with injury), were more likely to indicate that they trust doctors in the ED more than their primary care provider to care of their child's injuries (56% vs. 46%; $p=0.003$ (table 4).

Comparison by Hospital EDs

There was a lower proportion of injury related presentations at the specialist children's hospital when compared to the other general hospital EDs (13% of all presentations to the specialist hospital were injury related compared to 42% of all presentations (average of 36% per site) at the other general hospital EDs; $p < 0.001$).

Parents that presented with a child at the specialist children's hospital were more likely to agree with the statements that *"Injured children should be taken to the ED, not a doctor's surgery"* and that *"I trust the doctors in the ED more than my Primary Care provider to care for my child's injuries"* than parents presenting with an injured child at general hospital EDs (table 5).

DISCUSSION

Among the most important findings of this study is that most parents of children presenting to ED with lower urgency conditions reported a preference for ED for the care of child injuries rather than GP surgeries. Also of importance was our finding that most parents did not attempt to make an appointment with their GP prior to attending ED for their child's lower urgency injury. Of those that did attend their GP, injured children were more likely than children with an illness to be referred to the ED by their GP.

Why do parents of children with a lower urgency injury present to ED?

A 2007 UK population study observed that proximity to ED has a positive effect on the likelihood of patients using the ED for unscheduled care compared to GP surgeries (9). In our study, fewer than 20% of parents reported that the ED being closer to their home than their GP as an important reason for bringing their child to the ED; and most (81%) parents chose the closest hospital ED to their home. Over half (56%) of parents surveyed in our study reported that the ED is their preferred care centre for children with injuries.

While the literature supports the notion that injuries disproportionately affect disadvantaged families (10), our study found that income and education levels were evenly distributed across the sample and were not related to whether a parent chose to present to ED with their injured child.

Do parents trust doctors within the ED more than general practitioners for the treatment of injuries?

Trust is an important aspect of any doctor patient relationships however there is a dearth of literature that has explored the issue of whether patients trust GPs for the care of injuries. A Denmark study showed that when presenting with an injured child to ED, parents often bypass primary care and are

less likely to attempt to make an appointment with a GP prior to presenting to ED (11). One other study from Turkey suggests that most often, lower urgency injuries require only explanation and medical advice from the GP; and usually, additional tests or hospital referrals are not necessary (12).

Our results suggest that parent trust for doctors in the ED for the treatment of lower urgency injuries is high and this increases when parents self refer to ED, or choose to present to a specialty children's hospital. The proportion of children with an injury that were referred to the ED by their GP suggests that GPs may also support the notion that EDs are the preferred care centre for children with injuries and may be a reflection of difficulties GPs face in providing care for injuries in their practices such as the time and supplies required.

Parent anxiety has been hypothesised as playing a significant role in influencing GPs to refer children with low urgency injuries to ED for further examination or for parents to present directly to the ED. Other studies have attempted to look at other various aspects that may influence parent anxiety around injuries. A 2013 study found that parental education level was related to the investigations pursued in the ED. It suggests that parents with higher education levels are harder to persuade that diagnostic procedures may not be necessary for some injuries (13). This study also found that radiological investigations alone failed to alleviate parent anxiety, yet injury examination by a consultant (ED doctor) was found to be very effective in alleviating parent anxiety.

GP training in child injuries

GP training in key areas of medical practice including child injury management has not changed in recent years as evidenced by the RACGP curriculum published date (2011). While aspiring GPs are required to undertake a paediatric placement in a hospital setting, the majority of training occurs during placements within general practice (14). However, data show that children are a minor proportion of a GP practice and despite increasing numbers of children in Australia, GPs do not see more children now than they did in consultations in 2004 (6, 17).

A 2012 study found that Australian GP registrars almost exclusively see common illness related paediatric problems and receive limited to no experience with injuries or more complex child presentations (15). This limited experience of either providing or being exposed to children may result in GPs being less comfortable in taking care of children in their practice. Our results support the hypothesis that GP lack of experience and exposure to children may translate into higher rates of lower urgency injured children being referred to emergency departments when some might be appropriately managed in primary care.

Factors such as GP confidence in treating injuries may also play a role in the increase in child presentations to the ED. Decision making and risk management, such as that provided by the ED, has been identified in the literature as a productive way GPs manage their uncertainty (16) and the potential barriers to providing care for injuries in the GP clinic.

Limitations

There are some limitations to this study. Not all parents surveyed indicated whether their child presented with an injury or illness (N=39), therefore the sample for this paper differs slightly from the overall project sample. Additionally, the sample was only taken from the one specialist and three Melbourne metropolitan hospitals and, as such, the data may not be generalisable to other areas of Australia.

Conclusions

Our findings support the notion that the long standing role of GPs treating children with low urgency injuries within the community may no longer be the preferred care setting for a significant proportion of parents. While our study shows that a strong majority of parents prefer to utilize the ED, rather than GPs for the treatment of lower urgency child injuries, this issue requires further investigation to gain deeper insights into the rationale for such parent care preferences. This may be especially true for parents who self refer to ED.

Such preferences may be due to a variety of factors including parental convenience and/or confidence with GP care. With a higher proportion of children with an injury than an illness being referred to the ED by their GP, improving treatment skills and training opportunities for GPs may reduce GP referrals of lower urgency child injuries to ED. However, the improvement of GP skills alone may not be sufficient to impact parental preferences for care.

Further research should be conducted to investigate GP confidence in treating children with injuries and any potential constraints of the current GP practice environment that is leading to these referrals. There is a paucity of research on the self-efficacy of the treatment of children by GPs in Australia. However, previous work has demonstrated a changing pattern of care for children among GPs.

Finally, our work has demonstrated that parental preferences and motivators in health seeking behavior for their child is multifactorial and may not be easily amenable to change.

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Tables

Table 1. Demographic variables by presentation type (injury vs. illness)

Demographic variables	% (N)	% (N)	P-value
Birth Order	Injury (N=364)	Illness (N=726)	
1st born	46 (166)	58 (420)	<0.001
Age of primary carer	Injury (N=366)	Illness (N=728)	
>30	74 (269)	66 (481)	0.01
Age of child	Injury (N=371)	Illness (N=734)	
≥1 year	91 (338)	70 (514)	<0.001
Level of education	Injury (N=365)	Illness (N=721)	
Secondary school or less	23 (83)	18 (130)	0.3
Trade, certificate or diploma level qualification	33 (121)	32 (234)	
Bachelor or Postgraduate Qualification	44 (161)	50 (357)	
Annual income	Injury (N=355)	Illness (N=708)	
≤\$100,000	68 (245)	68 (480)	0.7

Table 2. Injury presentations by time of day

	Day (N=294) % (N)	Evening (N=297) % (N)	Night (N=186) % (N)	Weekend (N=330) % (N)	P-value
Injury	32 (94)	37 (109)	17 (31)	42 (139)	<0.001
Illness	68 (200)	63 (188)	83 (155)	58 (191)	

Table 3. Factors relating to presentation to ED

	Presented with an injury (N=373) % (N)	Presented with an illness (N= 738) % (N)	P value
Attempted to make an appointment with GP prior to attending ED	35 (131)	46 (341)	<0.001
Treated in ED in last 3 days	5 (20)	10 (74)	0.009
Have a regular GP	82 (303)	78 (577)	0.1
ED is closer to home than GP	17 (65)	15 (111)	0.3

Table 4. Parent perceptions of care of injuries (N=1111)

	Children with injury (N=373)	Children with illness (N= 738)	P value
	Agree/ Strongly agree % (N)	Agree/ Strongly agree % (N)	
Injured children should be taken to the ED, not a doctor's surgery	65 (243)	69 (509)	0.2
If I am worried about a broken bone in my child, I will come straight to the ED and not a doctor's surgery	82 (306)	82 (606)	1.0
If my child needs stitches I come straight to the ED	71 (266)	68 (504)	0.3
I trust the doctors in the ED more than my Primary Care provider to care for my child's injuries	46 (173)	56 (411)	0.003

Table 5. Parent perceptions of care of injuries by hospital type (N=1150)

	Specialist hospital (N= 324)	Other hospitals (N=826)	P value
	Agree/ Strongly agree % (N)	Agree/ Strongly agree % (N)	
Injured children should be taken to the ED, not a doctor's surgery	72 (230)	66 (549)	0.1
I trust the doctors in the ED more than my Primary Care provider to care for my child's injuries	61 (199)	49 (408)	<0.001

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Author/s:

Gafforini, S;Turbitt, E;Freed, GL

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