

# The knowledge level and practices on childhood injuries and interventions among parents at home

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## BACKGROUND

There are many common household emergencies that may involve children. These includes poisoning, falls, burns, choking, animal bites, febrile illnesses and febrile fits. Knowledge about preventive measures to avert these accidents at home as well as being familiar with first aid measures may help in preventing further complications and may aid in recovery. Therefore, this study aims to find out the general public knowledge regarding the preventive steps and early emergency steps that can be taken upon emergencies occurring among children.

## METHODS

A cross sectional study incorporating a questionnaire/instrument that included brief socio-demographic data and 10 questions on common household injuries and emergencies, and either preventive steps or early interventions was used. Questionnaire was distributed among parents attending health talks at the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia (UPM) between June 2019 to November 2019. The topics covered were on poisoning, falls, burns, choking, animal bites, high fever and febrile fits.

## RESULTS

The total number of respondents was 119 parents. This study overall showed a good knowledge, attitude and practice among the parents towards common emergency inflicting children. Older aged and female parent were found to have more knowledge and positive attitude towards common emergencies among children, respectively.

## CONCLUSION

Group identified as having a lower knowledge, attitude and/or practice should be targeted in future community education programmes to increase the knowledge as well as to inculcate positive attitudes and practices towards identifying and managing common household emergencies among children.

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## INTRODUCTION

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Globally road traffic accidents, fire-related burns, drowning and falls combined, contribute to the top 15 causes of mortality among children aged 0–19 years.<sup>1</sup> In those below five years of age, most injuries occur in the home itself.<sup>2</sup> Domestic accidents have been singled out as a major threat to the safety of pre-school children in many developed countries. For example, in the Netherlands these injuries caused many avoidable deaths in those under five years of age.<sup>3</sup> These accidents contribute to 50,000 children having to be treated in hospital yearly which equates to 6% of all children aged less than five years at the national level. Higher levels of injury morbidity and mortality occur most often among those from a poorer background.<sup>4</sup>

There is a dearth of studies done looking at the practice, attitude and knowledge of parents regarding common household accidents and injuries that can occur in their children such as poisoning, falls, burns, choking, animal bites, high fever and febrile fits and the possible early intervention steps that can be undertaken.

Therefore, this study aims to determine the practices, attitude and knowledge level among parents regarding common household emergencies and injuries and early interventional steps that can be taken. Any gaps identified from this research can help to design an effective educational program to address these flaws.

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## METHODS

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A cross sectional study incorporating a questionnaire/instrument that included brief socio-demographic data and a total of 10 questions on common household injuries and emergencies, and either preventive steps or early interventions was used. The topics covered were six core topics on poisoning, falls, burns, choking, animal bites, high

fever and febrile fits. There was a total of 4 questions on knowledge and 3 questions each on practice and attitude, with each of topics having 1-2 question each in any of these domains.

Respondents were the general public attending health talks held by medical lecturers from the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia (UPM) from June 2019 to November 2019. These can include in UPM or outside UPM sites. All attendees were eligible for inclusion, provided that they were parents and aged above 18 years. The topics covered were six core topics on poisoning, falls, burns, choking, animal bites, high fever and febrile fits. The minimum sample size calculated accounting for 20% non-respondents was 97 participants (based on the highest percentage of knowledge question that was correctly answered i.e. 94.4% based on a study by Nadeeya et al, 2016 using the following formula):<sup>5</sup>

$$n = \pi(1 - \pi) \left( \frac{Z}{E} \right)^2 = 0.944(1 - 0.056) \left( \frac{1.96}{0.05} \right)^2 = 81$$
parents in which  $n$  is the sample size,  $Z$  is the standard normal value corresponding to the desired confidence level,  $\pi$  is the prevalence of interest and  $E$  is maximum error that is allowed (margin of error).

All statistical analysis was done using the Statistical Package for Social Sciences (SPSS version 23). Total scores were derived from the number of correct answers on three domains of knowledge, attitude and practice. Median scores from the three domains of knowledge, attitude and practice were used to determine the cut offs for good knowledge. Chi-square test or Fisher exact tests were used for the categories or dichotomous predictors.

All analyses were done with 95% confidence intervals (CI), and the level of significance was set at  $p < 0.05$ . Ethics approval was obtained from the JKEUPM (Universiti Putra Malaysia Medical Ethics Committee) prior to commencement of this study.

## RESULTS

Table 1 shows the socio-demographic characteristics of the respondents. The total number of respondents who were approached and agreed to participate in this study was 119 parents (100% response rate). The median age of the participants were 33 years. Majority of the respondents were female (80.7%), Malay (97.6%), and non-professional (87.4%). The median number of children were 3.

Table 2 shows the median score of the three domains of assessment. The maximum score for the knowledge, practice and attitude domains were 4,3 and 3, respectively. The median score obtained by the respondent for the knowledge, practice and attitude domains were 3,2 and 2, respectively.

Table 3 shows the factors associated with total knowledge scores. Variables that had a p value of < 0.25 in the univariate logistic regression were entered into the multivariate logistic regression to determine the predictors for higher knowledge

score. It was found that being an older parent had a 1.1 time more likelihood to have higher knowledge on common childhood emergencies (95% 1.033-1.260,  $p=0.009$ ).

Table 4 shows the factors associated with total practice scores. Variables that had a p value of < 0.25 in the univariate logistic regression were entered into the multivariate logistic regression to determine the predictors for higher practice score. Even though gender and occupational groups were significantly associated with total practices scores in univariate analysis, none of the factors were found to be significant in multivariate analysis.

Table 5 shows the factors associated with total attitude scores. Variables that had a p value of < 0.25 in the univariate logistic regression were entered into the multivariate logistic regression to determine the predictors for higher attitude score. It was found that being a male parent had a 0.07 time less likelihood to have a better attitude on common childhood emergencies (95% 0.013-0.390,  $p=0.002$ ).

**Table 1:** Socio-demographic characteristics of the respondents (N=119)

Characteristics	Frequency	%
<b>Age, years</b>	Median (IQR, Q1, Q3) 33.0(5,32,37)	
<b>Gender</b>		
Male	23	19.3
Female	96	80.7
<b>Ethnic group</b>		
Malay	116	97.6
Chinese	1	0.8
Indian	1	0.8
Others	1	0.8
<b>Occupational group</b>		
Professional	15	12.6
Non- Professional	104	87.4
<b>Number of children</b>	Median (IQR, Q1, Q3) 3(0,3,3)	

**Table 2:** Median score of the 3 domains of assessments

Domain	Median (IQR, Q1, Q3)
Total knowledge score (range 0-4)	3(1,2,3)
Total practice score (range 0-3)	2(1,1,2)
Total attitude score (range 0-3)	2(1,2,3)

**Table 3:** Factors associated with total knowledge scores

Characteristics	Knowledge n (%)		Univariate analysis			Multivariate analysis		
	Good (n=69)	Poor(n=50)	Odds ratio	95%CI	P value	Odds ratio	95%CI	P value
<b>Age, years Median (IQR)</b>	33(7.5)	33(1.25)	1.142	1.039- 1.256	<b>0.006</b>	1.141	1.033- 1.260	<b>0.009</b>
<b>Gender</b>								
Male	6(26.1)	17(73.9)	0.185	0.067- 0.513	<b>0.001</b>	0.265	0.052- 1.340	<i>0.108</i>
Female	63(65.6)	33(34.4)	ref		<i>ref</i>	ref		<i>ref</i>
<b>Ethnic group</b>								
Malay	68(58.6)	48(41.4)	ref	ref	<i>ref</i>			
Chinese	0(0)	1(100)	0	0	<i>1.000</i>			
Indian	0(0)	1(100)	0	0	<i>1.000</i>			
Others	1(100)	0(0)	0	0	<i>1.000</i>			
<b>Occupational group</b>								
Professional								
Non- Professional	3(20) 66(63.5)	12(80) 38(36.5)	0.144 ref	0.038- 0.542	<b>0.004</b> <i>ref</i>	0.528 ref	0.070- 4.000	<i>0.536</i> <i>ref</i>
<b>Number of children Median (IQR)</b>	3(0)	3(0.25)	0.894	0.527- 1.515	<i>0.676</i>			

**Table 4:** Factors associated with total practice scores

Characteristics	Practice n(%)		Univariate analysis			Multivariate analysis		
	Good (n=69)	Poor (n=50)	Odds ratio	95%CI	P value	Odds ratio	95%CI	P value
<b>Age, years</b> Median (IQR)	33(5)	33(5)	1.004	0.928-1.087	<i>0.915</i>			
<b>Gender</b>								
Male	5(21.7)	18(78.3)	0.207	0.071-0.604	<b>0.004</b>	807737478.3	0	<i>0.999</i>
Female	55(57.3)	41(42.7)	ref		<i>ref</i>	ref	ref	<i>ref</i>
<b>Ethnic group</b>								
Malay	60(51.7)	56(48.3)	ref	ref	<i>ref</i>			
Chinese	0(0)	1(100)	0	0	<i>1.000</i>			
Indian	0(0)	1(100)	0	0	<i>1.000</i>			
Others	0(0)	1(100)	0	0	<i>1.000</i>			
<b>Occupational group</b>								
Professional	5(33.3)	10(66.7)	0.445	0.142-1.393	<b>0.165</b>	0	0	<i>0.999</i>
Non- Professional	55(52.9)	49(47.1)	ref		<i>ref</i>	ref	ref	<i>ref</i>
<b>Number of children</b> Median (IQR)	3(0)	3(1)	0.937	0.558-1.575	<i>0.807</i>			

**Table 5:** Factors associated with total attitude scores

Characteristics	Attitude n(%)		Univariate analysis			Multivariate analysis		
	Good (n=69)	Poor(n=50)	Odds ratio	95%CI	P value	Odds ratio	95%CI	P value
<b>Age, years</b> Median (IQR)	33(5)	32.5(5)	1.028	0.910-1.160	0.660			
<b>Gender</b> Male Female	12(52.2) 91(94.5)	11(47.8) 5(5.5)	0.060 ref	0.018-0.202	<b>&lt;0.001</b> ref	0.071 ref	0.013-0.390	<b>0.002</b> ref
<b>Ethnic group</b> Malay Chinese Indian Others	103(88.8) 0(0) 0(0) 0(0)	13(11.2) 1(100) 1(100) 1(100)	ref 0 0 0					
<b>Occupational group</b> Professional Non- Professional	8(53.3) 95(91.3)	7(46.7) 9(8.7)	0.108 ref	0.032-0.368	<b>&lt;0.001</b> ref	0.993 ref	0.170-5.810	0.994 ref
<b>Number of children</b> Median (IQR)	3(0)	2(2)	2.868	1.384-5.943	<b>0.005</b>	1.452	0.797-2.646	0.223

## DISCUSSION

Most of the respondents in this study were in their thirties, female, Malay and non-professional. This correlates strongly with the demographic constituent of a typical government institutions.

Majority of the respondent also had 3 kids. This also strongly correlates with the current national survey by the Department of Statistics, Malaysia which estimates the average household members to be around 4.2 members.<sup>6</sup>

In this study, respondents who were older were found to have higher knowledge scores on common

childhood emergencies. This is not unexpected as those of older age may have been a parent for a longer period and may have been involved in similar incidents in the past and therefore are more knowledgeable on this topic. This is in agreement with a study by Harere R et al., which showed that that higher knowledge scores were associated with older age, having experience of previous child injuries and also additional factors such as higher monthly income and possibly having taking previous first aid courses.<sup>7</sup>

None of the factors had a significant association with the practice score. This indicates that most

parents will do their best in emergency situations, prioritising the safety of their child. This agrees with a systematic review which states that parents will seek emergency department help if they find even a slightest risk to deterioration in their child 's health, worldwide.<sup>8</sup>

Females were found to have higher positive attitude scores as compared to the male parents. As is well known, female gender tends to be more health conscious and discuss health issues more actively with their friends and relatives. This would have possibly contributed to the positive findings in this study. These findings are supported by two previous studies which state that woman are more likely to be health seekers as compared to man as well as to actively search the internet more often for health related information.<sup>9-10</sup>

Among the strength of this study is that it is more inclusive as compared to the previous study by Nadeeya et al that included only mothers and the large sample size that has the required power.<sup>5</sup> Limitations remains that only parents attending the

teaching sessions were included, thus limiting the generalisation of this study's finding.

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### CONCLUSION

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In conclusion, this study overall showed a good knowledge, attitude and practice among the parents towards common emergency affecting children. Older aged and female parents were found to have more knowledge and positive attitude towards common emergencies inflicting children at home, respectively.

The group identified as having a lower knowledge, attitude and/or practice should be targeted in future community education programmes to increase the knowledge as well positive attitudes and practices towards identifying and managing common emergencies among children.

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