

## Exploring Baby Walker Usage and Related Injuries in Mecca Province, Saudi Arabia

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### RESERACH

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### ABSTRACT

#### Background

Baby walkers have commonly used devices that allow infants to move around with the support of wheels, but they have been associated with various risks and hazards. Therefore, this study aimed to assess baby walker usage and their injuries, the awareness of caregivers regarding common misconceptions surrounding baby walkers, and to explore their attitudes toward general children's safety in the Western Province of Saudi Arabia.

#### Material and Methods

A cross-sectional survey was conducted among families with children aged older than six months and younger than 12 years in the Western Province of Saudi Arabia, using a self-administered questionnaire. A total of 75 kindergartens and schools were contacted for data collection between October and November 2022. The questionnaire included sections to gather information on the socio-demographic characteristics of the caregivers, their awareness of common misconceptions regarding baby walkers and their attitudes towards general children's safety.

#### Results

84.4 Per Cent of caregivers used baby walkers for various reasons, primarily to facilitate early walking for the child (73.1 Per Cent) and provide entertainment (54.1 Per Cent). However, 22 Per Cent of users reported injuries related to baby walker usage. Regarding the awareness, only 6 Per Cent of caregivers were aware of assessed common misconceptions surrounding baby walkers. Additionally, the study revealed that 43 Per Cent of the sample displayed a poor to moderate attitude towards general child safety.

#### Conclusion

The findings emphasize the need for targeted educational initiatives to increase awareness, correct misconceptions, promote positive attitudes towards child safety, and mitigate the risks associated with baby walker usage. Healthcare professionals and other stakeholders should play an active role in providing accurate information and promoting safe practices to ensure the well-being and safety of infants.

#### Key Words

Baby walkers, Safety, Injury, Awareness, Cross-sectional study

#### Introduction

Baby walkers are popular wheeled devices that parents traditionally use to help infants move around with support before they can walk unassisted<sup>1</sup>. They are also perceived to facilitate early walking and provide entertainment. However, concerns have been raised over the years regarding the potential risks associated with their use. Research studies have indicated that baby walkers can lead to accidents and injuries, including falls downstairs, burns, and other household mishaps<sup>2-9</sup>. These incidents have prompted the development of safety regulations and legislative measures in several countries to restrict or ban their use<sup>10</sup>. For instance, the Committee on Injury and

Poison Prevention of the American Academy of Pediatrics recommended prohibiting the production and sale of baby walkers with wheels in 2001. In response to these safety concerns, several nations have implemented education and training on injury prevention, which has received overwhelmingly positive responses from parents. These initiatives have led to a decline in the number of injuries being reported<sup>11</sup>.

In recent years, the use of baby walkers has become a topic of concern among parents, healthcare professionals, and child safety advocates. Baby walkers are designed to provide mobility to infants who have not yet developed independent walking skills. However, research has raised significant questions about their safety and impact on a child's development<sup>12,13</sup>. Furthermore, medical professionals and child development experts have highlighted the negative impact of baby walkers on infants' motor and cognitive development<sup>14</sup>. Studies suggest that prolonged use of walkers can hinder the natural process of learning to walk independently<sup>15, 16</sup>. It can delay the acquisition of balance, coordination, and muscle strength, which are essential for healthy development. Considering these concerns, it is imperative to investigate the awareness and attitudes of parents regarding baby walkers to promote informed decision-making and ensure the safety and well-being of infants.

Assessing parental awareness of potential hazards associated with baby walkers is crucial to reducing the incidence of walker-related injuries. Baby walkers have been associated with various risks including falls, burns, and other injuries. However, there is limited research on parental knowledge of these risks and the associated injuries. To date, only few studies have investigated the reasons for and associated injuries related baby walkers. One study focused on a specific city, while another study is outdated and does not reflect the current situation. Therefore, there is a need for current and comprehensive research to provide up-to-date information on parental awareness of baby walker risks and associated injuries. Therefore, the aim of this research study was to investigate baby walker usage, safety awareness, and attitudes towards children's safety by determining the prevalence of baby walker use, assessing the level of awareness regarding common misconceptions regarding baby walkers, investigate the prevalence and severity of baby walker-related injuries among children, and explore attitudes towards general children's safety among parents and caregivers.

## Methods

### Study design and setting

A cross-sectional survey was conducted among caregivers residing in the Western Province of Saudi Arabia. The data collection phase spanned duration of 1 month between October 1st and November 1st, 2022. To ensure comprehensive coverage, our data collectors reached out to a total of 75 kindergartens and schools. The objective was to include families with children aged older than six months and younger than 12 years. To achieve this, schools were selected from various locations within the Western Province. This included the three major cities of Taif, Makkah, and Jeddah, as well as schools from smaller cities and villages within the region. By targeting a diverse range of educational institutions, we aimed to gather a representative sample that adequately reflected the caregiver population in the Western Province of Saudi Arabia. A mixture of convenience and snowball sampling was used to recruit the participants. A minimum sample size of 579 was ideal for this research, ensuring adequate statistical power and precision in capturing the intended data, allowing for meaningful analysis and reliable conclusions to be drawn from the study.

### Questionnaire development

The questionnaire was adapted from a previously validated study available in both English and Arabic. The questionnaire's design and content were modified to fit the target population and inclusion criteria, which aimed to broaden the range of families with older children and reach them through schools. The adapted questionnaire underwent a review process by a paediatric consultant and two academic researchers to ensure its suitability for the intended population. The survey comprised 35 questions, organized into five major domains. The first domain collected demographic information such as gender, age, educational background, and the respondent's relationship to the child. The second domain focused on baby walker usage, seeking to determine the prevalence, frequency, reasons behind parents/caregivers using baby walkers and to identify the primary sources of information about baby walkers for parents/caregivers. The third domain assessed respondents' general awareness through three questions, with those who disagreed with each statement categorized as "aware" and the rest as "unaware". The fourth domain gathered data on baby walker-related injuries, recording any incidents and their severity. The fifth and final domain explored parents/caregivers' attitudes towards children's

safety measures, with a total attitude score calculated by summing up the responses to eight specific items. These attitude scores were further categorized as optimum, good, moderate, or poor. Depending on the questions, statements that were considered favourable attitudes were scored 1 if the participant chose (always, very often and sometimes), while statements that are unfavourable attitudes were scored 1 point if answered with (rarely or never). The estimated completion time for the questionnaire was approximately 7 minutes.

#### **Ethical approval**

The study obtained ethical approval from the Scientific Research Ethics Committee of Taif University (reference No: 44-037). The study assured that participants responses remained anonymous and confidential, and consent was obtained through an online survey before completing the questionnaire.

#### **Piloting the questionnaire**

A pilot study was conducted with 25 caregivers to ensure the questionnaire's readability and feasibility. Based on their feedback, adjustments were made to the questionnaire included specifying that respondents use Arabic numerals for numerical questions, adding a question about school names, and revising questions using layman's terms to improve comprehension.

#### **Data Analysis**

Data cleaning and pre-processing were conducted to ensure the quality and integrity of the dataset. This involved identifying and addressing any missing, incomplete, or erroneous data. Outliers were examined and treated appropriately to minimize their impact on the analysis. SPSS version 25 (IBM, Corp. USA) was used for data analysis. Descriptive statistics were used to summarize and describe the findings. Inferential statistics, such as chi-square tests, were utilized to examine relationships, and identify significant associations between variables.

## **Results**

#### **Participants characteristics (n= 604)**

A total of 604 parents completed the survey where 146 (24.2 Per Cent) were fathers of the child, and 430 (71.2 Per Cent) were mothers. A majority (91.7 Per Cent) were Saudi citizens, and 578 (95.7 Per Cent) were married. Educational levels of the parent showed about 388 (64.2 Per Cent) and 322 (53.3 Per Cent) had a bachelor's education. Mothers' occupation status showed that 372 (61.6 Per Cent) had no occupation or were housewives. About 316 (52.3 Per Cent) had an average family income of 10,000-25,000 riyals. The

gender of the child showed that 312 (51.7 Per Cent) were females, and about 184 (30.5 Per Cent) were firstborn children. [Table 1].

It was observed that 510 (84.4 Per Cent) used baby walkers. The mean starting age of baby walker use was found to be  $7.29 \pm 3.5$  months. When we assessed the reason for using of baby walker, it was reported by 373 (73.1 Per Cent) participants that they used it to help the child to walk early, 276 (54.1 Per Cent) used it for baby's entertainment, 207 (40.6 Per Cent) for doing and concentrating on household work, 200 (39.2 Per Cent) to keep the baby occupied, 110 (21.6 Per Cent) used it as it was previously used for the older sibling and 39 (7.6 Per Cent) used it as it was received as a gift [Figure 1]. When we assessed the source of information regarding baby walkers, about 251 (43.2 Per Cent) reported that they didn't receive any information, whereas 180 (29.8 Per Cent) had information from a non-health professional friend or relative, 132 (21.9 Per Cent) from social media, and 67 (11.1 Per Cent) from the child's doctor [Figure 2].

#### **Assessment of awareness related to baby walker use**

The assessment of awareness related to baby walker use, and its relationship between its usage is given in Table 2. The results revealed that a relatively low percentage of respondents (14.9 Per Cent) demonstrated awareness that baby walkers do not promote early walking. Notably, the awareness level was even lower among baby walker users (12.5 Per Cent) compared to non-users (27.7 Per Cent). This difference in awareness between the two groups was statistically significant ( $p < 0.001$ ). Furthermore, it was reported that only 11.3 Per Cent of the respondents were aware that baby walkers are not helpful for their babies. This awareness level was even lower among baby walker users (9 Per Cent) compared to non-users (23.4 Per Cent). This difference in awareness between the two groups was statistically significant ( $p < 0.001$ ). Similarly, the survey revealed that only 25.5 Per Cent of the respondents were aware of the potential hazards posed by baby walkers. Also, the total number of respondents who disagreed to all three statements were 36, representing only 6 Per Cent of the whole sample.

#### **Attitudes toward general child's safety**

The study revealed that 5.1 Per Cent of the sample displayed poor attitude towards general child safety, and 37.9 Per Cent displayed moderate attitude. Optimum attitudes and good attitudes regarding baby walkers were observed to be 6.5 Per Cent and 50.5 Per Cent, respectively. The caregivers' attitudes toward the general child's safety

are given in details in Table 3, and the relationship with caregivers' sociodemographic is given in Table 4.

The analysis revealed noteworthy observations regarding respondents' attitudes towards general child's safety. Mothers displayed a higher proportion of optimal attitude (7.7 Per Cent) compared to fathers (3.4 Per Cent), whereas fathers of the child exhibited a higher percentage of poor attitude (6.8 Per Cent) compared to mothers of the child (3.7 Per Cent) ( $p=0.005$ ). Marital status also played a role, as individuals who were married demonstrated a higher proportion of optimal attitude compared to others ( $p=0.020$ ). Furthermore, educational level influenced attitudes, with mothers who had a master's or Ph.D. degree showing a higher proportion of optimal attitude ( $p<0.001$ ), while fathers with a bachelor's degree displayed a higher proportion of optimal attitude compared to other educational levels ( $p=0.021$ ). Additionally, the analysis revealed that individuals who did not use a baby walker exhibited a higher proportion of optimal attitude (10.6 Per Cent) compared to those who used it (5.7 Per Cent). Conversely, those who used baby walkers displayed a higher proportion of poor attitude ( $p=0.040$ ).

#### **Injuries related to baby walkers**

The injuries related to baby walkers are given in Table 5. About 112 (22 Per Cent) had reported some injuries related to the use of baby walkers. Among those who had injuries, flipping over a flat surface was the most common cause of injury (52.7 Per Cent), followed by falling from the top of the stairs (42 Per Cent) and hitting a hard object (24.1 Per Cent). It was reported that 41 (26.6 Per Cent) that their child had superficial hematoma or bleeding due to the baby walker injury, 5 (4.5 Per Cent) had fractures, and 7 (6.3 Per Cent) had a head injury.

#### **Discussion**

To the authors knowledge, this is the first study in Western province of Saudi Arabia to investigate baby walker usage, safety awareness, and attitudes towards children's safety. Most participants (84.4 Per Cent) reported using baby walkers, which is slightly higher than reported in another study conducted in Saudi Arabia [2], highlighting their widespread usage despite the associated risks. Meanwhile, studies from other Middle Eastern countries have reported usage prevalence ranging from 54 Per Cent to 87 Per Cent<sup>15-17</sup>. Our findings found that the mean starting age of baby walker use was 7.29 months, indicating that caregivers tend to introduce baby walkers to their infants during early stages of development. The main reasons for using baby

walkers were to promote early walking and provide entertainment for the baby, reflecting a common belief that baby walkers aid in early mobility and amusement. However, these reasons do not align with established evidence regarding the lack of benefits and potential risks associated with baby walker usage. Interestingly, a recent study in Riyadh revealed similar reasons for using baby walkers, highlighting the consistency in caregiver perceptions and motivations [2]. This study findings indicates a low level of awareness among caregivers regarding baby walker-related misconceptions. The convergence of these findings emphasizes the importance of addressing misconceptions and increasing awareness regarding the potential risks associated with baby walker usage.

Regarding attitudes towards general child safety, the study revealed varying levels of attitude among caregivers. Mothers exhibited a higher proportion of optimal attitude compared to fathers, while fathers showed a higher percentage of poor attitude. Marital status and educational level also influenced attitudes, with married individuals and those with higher educational qualifications displaying more favourable attitudes. Additionally, those who did not use baby walkers exhibited a higher proportion of optimal attitude compared to those who used them. These findings highlight the importance of considering sociodemographic factors in understanding caregivers' attitudes towards child safety and promoting positive safety practices. This variation in attitudes may be influenced by cultural, societal, and personal factors that shape parenting roles and responsibilities. Evidence shows that women tend to have more knowledge and involvement in childcare-related tasks compared to men<sup>18</sup>. Another study found that fathers who were more involved in caregiving activities had higher levels of knowledge about child development and showed more positive attitudes toward parenting<sup>19</sup>. This highlights the positive impact on involved fathers on child development. While these studies suggest that mothers and fathers may differ in their knowledge and attitudes toward childcare. It is crucial to avoid making sweeping generalizations and to recognize the unique qualities and contributions of each parent. Our study also found potential differences in childcare practices between educated and less-educated parents, with educated parents often exhibiting greater involvement. Evidence shows that parental education is positively associated with increased childcare involvement<sup>20,21</sup>. Parents with higher levels of education tend to spend more time engaging in educational and enrichment

activities with their children compared to parents with lower levels of education. Additionally, we found that married parents demonstrated a more optimal attitude towards childcare compared to divorced parents. Studies show that children from divorced families generally experience lower levels of parental involvement and support compared to those from intact families<sup>22,23</sup>. Highlighting the potential impact of divorce on child safety and well-being.

Our findings revealed a concerning number of reported injuries associated with baby walker usage, highlighting the potential hazards and risks involved. Compared to a recent study, the prevalence of injuries in our study was higher, emphasizing the importance of addressing the issue. Also, our results show that most of the reported injuries were of a minor nature, similar to the results seen in another study, suggesting that while injuries do occur, they do not always lead to severe consequences. However, it is essential to note that any injury related to baby walker usage should be taken seriously, and appropriate medical attention should be sought to ensure the child's well-being and safety. Moreover, the rate of emergency visits resulting from baby walker-related injuries in our study was comparatively low at 16.1 Per Cent, in contrast to studies conducted in Riyadh and the United Arab Emirates. This difference may reflect variations in healthcare-seeking behaviour or differences in injury severity.

Our findings demonstrate that the majority of participants did not receive any information about baby walkers, while non-health professional friends or relatives, social media, and child's doctors were identified as common sources of information. However, A study found that once parents were made aware of the safety concerns, they were more likely to discontinue their use<sup>24</sup>. These findings highlight the need for healthcare professionals to play a more prominent role in providing accurate and evidence-based information about baby walkers, as well as the potential for utilizing social media platforms to disseminate educational content to caregivers.

#### **Strengths and Limitations**

Our study had several strengths, including the use of a standardized questionnaire that has been validated in previous studies, and rigorous data cleaning and quality control procedures to ensure the accuracy and consistency of the data. However, there were also several limitations that need to be considered when interpreting the findings. Firstly, our study sample was carefully selected but may not be fully representative of the broader population of

caregivers in Saudi Arabia, as we collected data only from one of the biggest provinces. This may limit the generalizability of our findings to other regions of the country. Secondly, our study relied on self-reported data from participants, which may be subject to social desirability bias. Participants may have felt pressure to provide socially acceptable responses, which could affect the accuracy of their answers. Additionally, recall bias may have influenced some responses due to memory limitations, forgetfulness, or a tendency to overestimate or underestimate certain factors.

#### **Implications**

This research has implications for interventions and policy development in various areas. It emphasizes the importance of raising awareness among parents about the potential risks associated with baby walker usage through educational campaigns and engaging healthcare professionals. The research also highlights the need to identify gaps in caregivers' understanding and awareness regarding baby walkers to tailor interventions effectively. The insights gained from this study can inform policies aimed at reducing the morbidity associated with baby walker-related injuries, as demonstrated by countries that have implemented bans. The research also highlights the influence of various factors on caregivers' attitudes towards child safety, emphasizing the need for targeted interventions and educational programs that address the specific needs and beliefs of different caregiver groups.

#### **Conclusion**

In conclusion, this study provides valuable insights into the characteristics, usage patterns, awareness levels, attitudes, injuries, and sources of information related to baby walkers among caregivers. The findings emphasize the need for targeted educational initiatives to increase awareness, correct misconceptions, promote positive attitudes towards child safety, and mitigate the risks associated with baby walker usage. Healthcare professionals and other stakeholders should play an active role in providing accurate information and promoting safe practices to ensure the well-being and safety of infants.

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### AUTHOR CONTRIBUTIONS

WK and MA conceived the study idea, contributed to the study's design and coordination, acquisition of data, analysis and interpretation of data, and writing and editing of the manuscript. AN performed the data analysis, contributed to the interpretation of the data, and writing of the manuscript. AD contributed to the acquisition and cleaning of data, writing of the manuscript, and ensuring the accuracy of the data. KA contributed to the study's design and coordination, acquisition of data, arranging with schools and data collectors and the writing of the manuscript. RA conceived of the study idea, participated in data analysis, and contributed to the writing of the manuscript. WA contributed to the study's design and coordination, sample selection, interpretation of results, and writing of the manuscript. AA contributed to the interpretation of results, ensured the validity of the study, and wrote and edited the manuscript. WK, MA, and AA supervised the project. All authors read and approved the final version of manuscript.

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### CONFLICTS OF INTEREST

No conflict of interest.

**This study has been approved by the institutional review board committee of King Saud Medical City, Riyadh, Saudi Arabia.**

### ACKNOWLEDGMENT

#### Tables

**Table 1: Sociodemographic characteristics of the participants.**

Sociodemographic Characteristics		Baby walker use		
		Yes N ( Per Cent)	No N ( Per Cent)	Total N ( Per Cent)
		510 (84.4)	94 (15.6)	604
Relationship with the child	Father	114 (78.1 Per Cent)	32 (21.9 Per Cent)	146 (24.2 Per Cent)
	Mother	374 (87 Per Cent)	56 (13 Per Cent)	430 (71.2 Per Cent)
	Other	22 (78.6 Per Cent)	6 (21.4 Per Cent)	28 (4.6 Per Cent)
Nationality	Saudi	472 (85.2 Per Cent)	82 (14.8 Per Cent)	554 (91.7 Per Cent)
	Non-Saudi	38 (76 Per Cent)	12 (24 Per Cent)	50 (8.3 Per Cent)
Social status	Married	484 (83.7 Per Cent)	94 (16.3 Per Cent)	578 (95.7 Per Cent)
	Divorced	20 (100 Per Cent)	0	20 (3.3 Per Cent)
	Widow	6 (100 Per Cent)	0	6 (1 Per Cent)
Residence	Jeddah	161 (87 Per Cent)	24 (13 Per Cent)	185 (30.6 Per Cent)
	Makkah	110 (82.1 Per Cent)	24 (17.9 Per Cent)	134 (22.2 Per Cent)
	Taif	109 (85.2 Per Cent)	19 (14.8 Per Cent)	128 (21.2 Per Cent)
	Other	130 (82.8 Per Cent)	27 (17.2 Per Cent)	157 (26 Per Cent)
Mother's education	Primary school	13 (81.3 Per Cent)	3 (18.8 Per Cent)	16 (2.6 Per Cent)
	Intermediate school	21 (80.8 Per Cent)	5 (19.2 Per Cent)	26 (4.3 Per Cent)

	Secondary school	114 (82.6 Per Cent)	24 (17.4 Per Cent)	138 (22.8 Per Cent)
	Bachelor's degree	332 (85.6 Per Cent)	56 (14.4 Per Cent)	388 (64.2 Per Cent)
	Master or PhD	26 (89.7 Per Cent)	3 (10.3 Per Cent)	29 (4.8 Per Cent)
	No primary education	4 (57.1 Per Cent)	3 (42.9 Per Cent)	7 (1.2 Per Cent)
Father's education	Primary school	15 (88.2 Per Cent)	2 (11.8 Per Cent)	17 (2.8 Per Cent)
	Intermediate school	31 (88.6 Per Cent)	4 (11.4 Per Cent)	35 (5.8 Per Cent)
	Secondary school	130 (87.2 Per Cent)	19 (12.8 Per Cent)	149 (24.7 Per Cent)
	Bachelor's degree	265 (82.3 Per Cent)	57 (17.7 Per Cent)	322 (53.3 Per Cent)
	Master or PhD	59 (84.3 Per Cent)	11 (15.7 Per Cent)	70 (11.6 Per Cent)
	No primary education	10 (90.9 Per Cent)	1 (9.1 Per Cent)	11 (1.8 Per Cent)
Mother's occupation status	Working	201 (86.6 Per Cent)	31 (13.4 Per Cent)	232 (38.4 Per Cent)
	No occupation	309 (83.1 Per Cent)	63 (16.9 Per Cent)	372 (61.6 Per Cent)
Average family income (SAR)	<10,000	176 (84.2 Per Cent)	33 (15.8 Per Cent)	209 (34.6 Per Cent)
	10,000 - 25,000	272 (86.1 Per Cent)	44 (13.9 Per Cent)	316 (52.3 Per Cent)
	>25,000	62 (78.5 Per Cent)	17 (21.5 Per Cent)	79 (13.1 Per Cent)
Gender of child	Female	252 (86.3 Per Cent)	40 (13.7 Per Cent)	312 (51.7 Per Cent)
	Male	258 (82.7 Per Cent)	54 (17.3 Per Cent)	292 (48.3 Per Cent)
First born child	No	362 (86.2 Per Cent)	58 (13.8 Per Cent)	420 (69.5 Per Cent)
	Yes	148 (80.4 Per Cent)	36 (19.6 Per Cent)	184 (30.5 Per Cent)

**Table 2: Awareness related to baby walker use among participants.**

Baby walkers' common misconceptions		Used baby walker			P value
		No (n=94)	Yes (n=510)	Total (n=604)	
Baby walkers promote early walking:	Agree	47 (50 Per Cent)	338 (66.3 Per Cent)	385 (63.7 Per Cent)	<0.001
	Not sure	21 (22.3 Per Cent)	108 (21.2 Per Cent)	129 (21.4 Per Cent)	
	Disagree	26 (27.7 Per Cent)	64 (12.5 Per Cent)	90 (14.9 Per Cent)	
Baby walkers are helpful for them in general	Agree	46 (48.9 Per Cent)	342 (67.1 Per Cent)	388 (64.2 Per Cent)	<0.001
	Not sure	26 (27.7 Per Cent)	122 (23.9 Per Cent)	148 (24.5 Per Cent)	
	Disagree	22 (23.4 Per Cent)	46 (9 Per Cent)	68 (11.3 Per Cent)	
Baby walker is safe for babies	Agree	41 (43.6 Per Cent)	230 (45.1 Per Cent)	271 (44.9 Per Cent)	0.242
	Not sure	23 (24.5 Per Cent)	156 (30.6 Per Cent)	179 (29.6 Per Cent)	
	Disagree	30 (31.9 Per Cent)	124 (24.3 Per Cent)	154 (25.5 Per Cent)	



## Exploring Baby Walker Usage and Related Injuries in Mecca Province, Saudi Arabia

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**Table 3: Caregiver's attitude toward general child's safety.**

	Don't remember	Never	Rarely	Sometimes	Very often	Always
Have you ever used an infant car seat for this child (When he/she was an infant)?	40 (6.6 Per Cent)	185 (30.6 Per Cent)	45 (7.5 Per Cent)	94 (15.6 Per Cent)	92 (15.2 Per Cent)	148 (24.5 Per Cent)
Have you ever left your child alone at home without the supervision of an adult present?	19 (3.1 Per Cent)	524 (86.8 Per Cent)	29 (4.8 Per Cent)	18 (3.0 Per Cent)	6 (1.0 Per Cent)	8 (1.3 Per Cent)
Has the child ever slept with you or another adult in a shared bed? When he was less than 4 months old	26 (4.3 Per Cent)	150 (24.8 Per Cent)	77 (12.7 Per Cent)	133 (22.0 Per Cent)	90 (14.9 Per Cent)	128 (21.2 Per Cent)
Have you ever used any pillows in a baby's sleeping area when he was less than 4 months old?	58 (9.6 Per Cent)	108 (17.9 Per Cent)	52 (8.6 Per Cent)	172 (28.5 Per Cent)	109 (18.0 Per Cent)	105 (17.4 Per Cent)
Have you ever left your child alone in the bathtub as a baby?	19 (3.1 Per Cent)	556 (92.1 Per Cent)	8 (1.3 Per Cent)	10 (1.7 Per Cent)	4 (0.7 Per Cent)	7 (1.2 Per Cent)
	<b>No</b>		<b>Yes</b>		<b>I don't know</b>	
Are the medicines in the house kept in a safe place (out of the reach of children)?	17 (2.8 Per Cent)		579 (95.9 Per Cent)		6 (1.3 Per Cent)	

Has your child had all his vaccinations on time to date?	44 (7.2 Per Cent)	554 (91.7 Per Cent)	6 (1.0 Per Cent)
Does anyone smoke in the child's home?	451 (74.7 Per Cent)	149 (24.7 Per Cent)	4 (0.7 Per Cent)

**Table 4: Relationship between attitude levels and sociodemographic characteristics.**

Sociodemographic characteristics		Optimal 195 (6.5 Per Cent)	Good 1525 (50.5 Per Cent)	Moderate 1145 (37.9 Per Cent)	Poor 155 (5.1 Per Cent)	P value
Relationship with child	Father	5 (3.4 Per Cent)	70 (47.9 Per Cent)	61 (41.8 Per Cent)	10 (6.8 Per Cent)	0.005
	Mother	33 (7.7 Per Cent)	226 (52.6 Per Cent)	155 (36.0 Per Cent)	16 (3.7 Per Cent)	
	Other	1 (3.6 Per Cent)	9 (32.1 Per Cent)	13 (46.4 Per Cent)	5 (17.9 Per Cent)	
Social status	Divorced	1 (5.0 Per Cent)	4 (20.0 Per Cent)	15 (75.0 Per Cent)	0 (0.0 Per Cent)	0.02
	Married	38 (6.6 Per Cent)	299 (51.7 Per Cent)	211 (36.5 Per Cent)	30 (5.2 Per Cent)	
	Widow	0 (0.0 Per Cent)	2 (33.3 Per Cent)	3 (50.0 Per Cent)	1 (16.7 Per Cent)	
Mother's education	Primary school	1 (6.3 Per Cent)	9 (56.3 Per Cent)	5 (31.3 Per Cent)	1 (6.3 Per Cent)	<0.001
	Intermediate school	4 (15.4 Per Cent)	14 (53.8 Per Cent)	5 (19.2 Per Cent)	3 (11.5 Per Cent)	
	Secondary school	4 (2.9 Per Cent)	58 (42.0 Per Cent)	65 (47.1 Per Cent)	11 (8.0 Per Cent)	
	Bachelors	29 (7.5 Per Cent)	205 (52.8 Per Cent)	141 (36.3 Per Cent)	13 (3.4 Per Cent)	
	Masters or PhD	1 (3.4 Per Cent)	17 (58.6 Per Cent)	11 (37.9 Per Cent)	0 (0.0 Per Cent)	
	No primary education	0 (0.0 Per Cent)	2 (28.6 Per Cent)	2 (28.6 Per Cent)	3 (42.9 Per Cent)	
Father's education	Primary school	0 (0.0 Per Cent)	9 (52.9 Per Cent)	6 (35.3 Per Cent)	2 (11.8 Per Cent)	0.021
	Intermediate school	1 (2.9 Per Cent)	15 (42.9 Per Cent)	18 (51.4 Per Cent)	1 (2.9 Per Cent)	
	Secondary school	6 (4.0 Per Cent)	70 (47.0 Per Cent)	66 (44.3 Per Cent)	7 (4.7 Per Cent)	
	Bachelors	19 (5.9 Per Cent)	174 (54.0 Per Cent)	112 (34.8 Per Cent)	17 (5.3 Per Cent)	
	Masters or PhD	11 (15.7 Per Cent)	33 (47.1 Per Cent)	24 (34.3 Per Cent)	2 (2.9 Per Cent)	
	No primary education	2 (18.2 Per Cent)	4 (36.4 Per Cent)	3 (27.3 Per Cent)	2 (18.2 Per Cent)	
Used baby walker	No	10(10.6 Per Cent)	44 (46.8 Per Cent)	31 (33.0 Per Cent)	9 (9.6 Per Cent)	0.04
	Yes	29 (5.7 Per Cent)	261 (51.2 Per Cent)	198 (38.8 Per Cent)	22 (4.3 Per Cent)	

**Table 5: Baby walker related injuries among baby walker usage.**

		<b>N ( Per Cent)</b>
<b>Injury (n=510)</b>	No	321 (62.9 Per Cent)
	Yes	112 (22.0 Per Cent)
	I don't know	77 (15.1 Per Cent)
<b>Cause of injury (n=112)</b>	Falling from the top of the stairs	47 (42.0 Per Cent)
	Flipping over a flat surface	59 (52.7 Per Cent)
	Hitting hard object	27 (24.1 Per Cent)
	Accessing dangerous items (e.g knives, disinfectants, and cleaning tools)	8 (7.1 Per Cent)
<b>Outcome of injury</b>	Burns	1 (0.9 Per Cent)
	Fractures	5 (4.5 Per Cent)
	Superficial hematoma or bleeding	41 (36.6 Per Cent)
	Head injury	7 (6.3 Per Cent)
	No outcome	62 (55.4 Per Cent)
<b>Future outcome or intervention applied</b>	Emergency visit	18 (16.1 Per Cent)
	Hospitalization in the ward	3 (2.7 Per Cent)
	Long-term disability	1 (0.9 Per Cent)
	Other	3 (2.7 Per Cent)
	No major future events	95 (84.8 Per Cent)

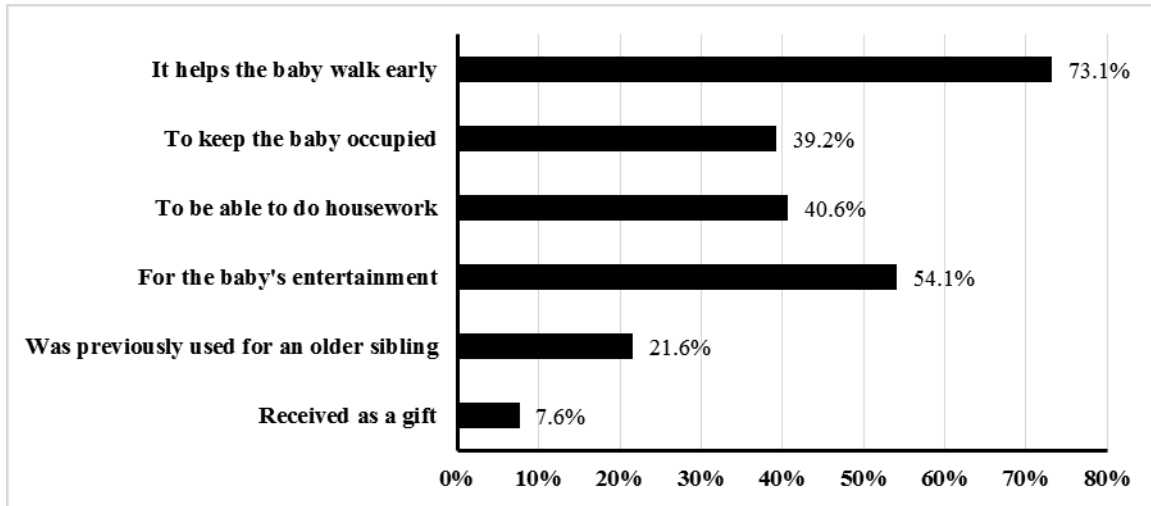


Figure 1: Reasons of using baby walkers.

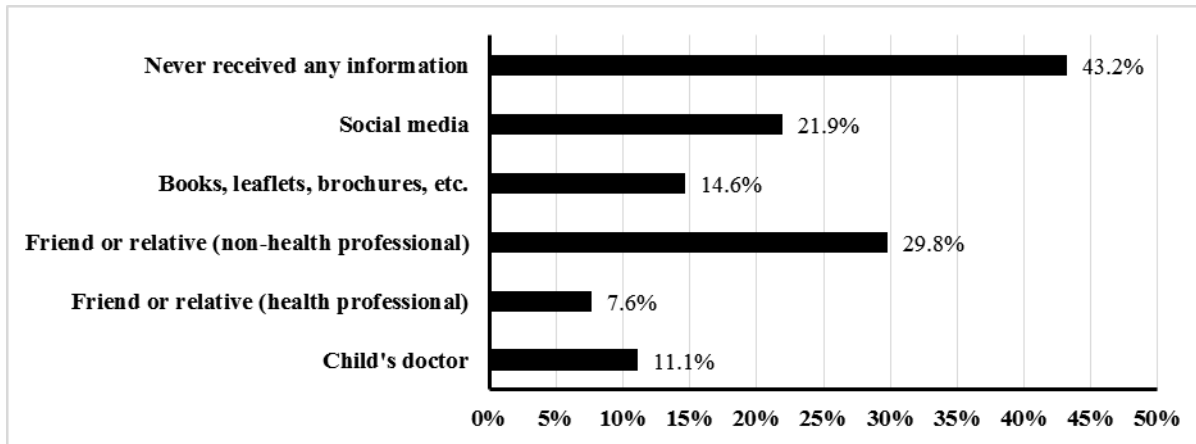


Figure 2: Source of information of baby walker

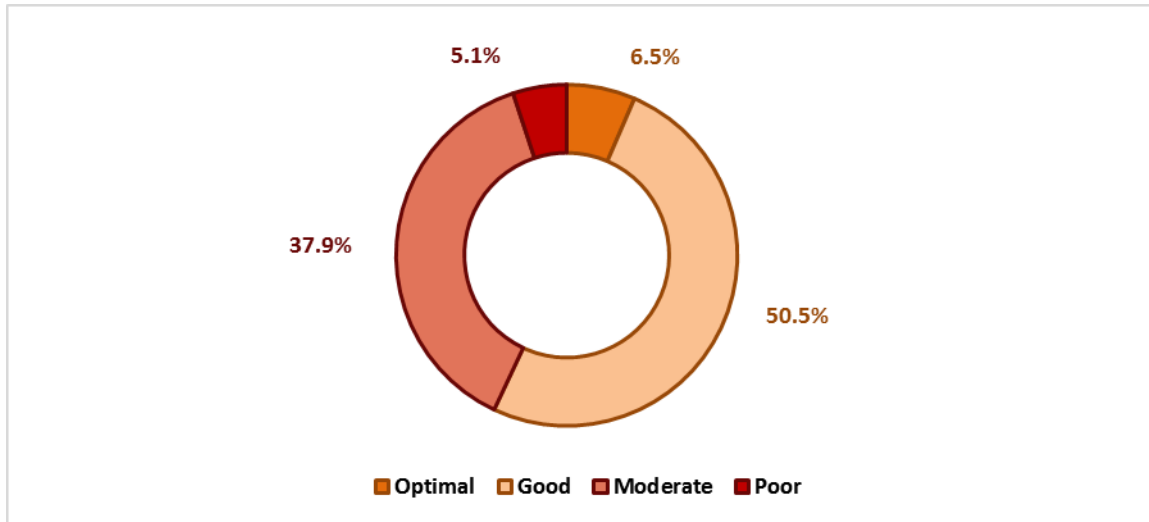


Figure 3: Attitude toward general child's safety