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The relationship between social and economic factors and home injuries among children aged 5-17 years in Algeria -A field study based on data from the Multiple Indicator Cluster Survey MICS 6 for the year 2019-

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Abstract:

Accidents are the cause of many injuries that can reach the point of death. At best, they result in permanent disabilities and disfigurement. They are also the cause of millions of deaths worldwide, as well as burns, drowning, and home injuries. These accidents are often seen as inevitable and occur in all communities and at all ages. However, they have a greater impact on families and communities when they involve young children, especially since they are not responsible for their injuries in most cases. Their injuries are often the result of factors beyond their control.

In this study, we aim to examine this phenomenon in Algerian families based on data from the Multiple Indicator Cluster Survey MICS 6, in order to highlight the most important social factors leading to injuries among children aged 5 -17 years, as well as the measures taken by families when injuries occur. We will also address the causes of children's injuries and the relationship between the spread of this phenomenon and social and economic factors.

Keywords: social and economic factors -and home injuries -children aged 5-17 years.

Introduction (Problem Statement):

Family is the first environment in which a child is raised, serving as a source of protection and security. It is where the child grows surrounded by care and attention from all individuals, especially parents who work to provide all necessary health conditions (peace, cleanliness, safety, etc.) to ensure the child's growth and development of their personality.

In order to develop their personality effectively, children naturally gravitate towards playing and moving around the house. This is to seek enjoyment, entertainment, acquire knowledge, and explore their surroundings, driven by an innate tendency towards exploration, experimentation, and curiosity. Therefore, the child needs a spatial area where they can express this inclination, with the family home being the ideal place for this. To prevent any harm to the child resulting from their use of the family home, family members often adhere to certain behaviors that help protect the child from harm, such as supervising them during movement, isolating objects that pose a danger to the child like sharp or glass objects, electrical sources, and electrical appliances. These actions are instinctive in all families as a means of protecting children from harm.

However, despite these precautions, many families in various societies and cultures report children being injured during childhood, characterized by physical growth and a desire for exploration, leading to injuries of varying severity. These injuries are often attributed to the mother or caregiver as they are the child's primary companions.

According to UNICEF Global Report on Child Injury Prevention in 2008, injuries and violence are a major cause of death for children worldwide, responsible for nearly 950,000 deaths among children and adolescents under 18 years of age annually. Injuries (from road accidents, falls, burns, poisoning, and drowning) account for 90% of these cases (Imad Youssef, 2019, p.11).

The main idea of this study is to investigate the relationship between the social and economic factors of the mother or caregiver, who is the constant companion of the injured child, with home injuries among children. Additionally, the study aims to understand the behavior of caregivers when children are injured. The study focuses on answering the following question:

- What is the relationship between social and economic factors for the mother and home injuries among children?

This question can be divided into sub-questions:

1- What are the patterns of exposure to injuries in Algerian society?
2- What are the set of behaviors that mothers adopt when their child is injured?

Objectives of the study:

- The primary goal of this study is to describe the phenomenon of home injuries and identify the social and economic factors that influence it, as well as to reveal the main causes.
- To examine the differences in the phenomenon of home injuries in the study area based on a set of variables (gender, place of residence, etc.).
- To study the size and type of home injuries among children.

Previous Studies :

1- **Mehmet Yavuz Ozbey . Dilek Ener(2022)**Frequency of Home Accidents of Children Between 0-6 Years and Levels of Diagnosis of Mothers' Safety Measures

the study, was aimed to investigate the frequency of home accidents of children aged 0-6, the most common types of accidents, and the knowledge levels of mothers on Diagnosing Safety Precautions for Home Accidents.

Descriptive study and was conducted with 380 parents who applied to the pediatric outpatient clinic in December 2021. The "Scale of Diagnosing the Safety Precautions for Home Accidents of Mothers with 0-6 Age Group Children" was used in the questionnaire form. In the analysis of the relations between the variables, independent groups t-test, the One-way Anova test, the Pearson correlation test, Chi-Square test and Logistic Regression Analyze were applied.

The frequency of children who had home accidents was 11.3%. The most common type of accident is falling. The mean score of the Mothers' Scale for Diagnosing Safety Measures for Home Accidents was 155.9±15.2. Identification of Safety Precautions scores are higher in mothers who graduated from college, those whose children had a home accident, and those who received first aid knowledge. The most important factors affecting the accident at home are the number of children and the caregiver. Conclusion: Home accidents, one of the preventable risk factors, are critical health problems. Providing information about all home accidents, especially falls, should be among the priority health targets.

2- **OLADUNJOYE Grace Olutayo (2013)**Mother's Education, Age and Knowledge about Home Accident Prevention among Preschool Children in Ilesa Metropolitan City: A Relational Approach .

This study examines the effect of mother education on prevention of home accident among preschool children in Ilesa Metropolitan city. The study adopted survey method in data collection using structured questionnaire. Cluster random sampling technique was adopted based on the two Local governments in the city. 187 nursing mothers from both Local Governments were interviewed. The data collected were analysed using both descriptive and inferential statistics. Findings revealed that there is highly significant difference between mothers' knowledge and their education attainment (χ=39.93; p-value=0.0000) indicating that level of education attainment has significant difference on the level of knowledge regarding the causes and prevention of home accident among pre-school children. Furthermore, the result shows a high level of significant difference between mothers' age and the level of knowledge display on the causes and prevention of home accidents (χ=18.78; pvalue =0.0000). This indicates that the older a mother is the more knowledge she would have acquired as far as home accidents are concern.

The study recommends that high premium should be placed on educational program on home accidents and how it could be managed if it occurs, especially for mothers who have preschool children. This may be part of both Pre and Post-natal training program in hospitals. Also, under-

aged mothers need be monitored and educated by experienced mothers and Community Health workers on the causes and prevention of home accidents among pre-school age children and that we should be our brothers' keeper

3- **Aya Al Rumhi and al:** Home Accidents among Children: A Retrospective Study at a Tertiary Care Center in Oman

The authors tried to identify the prevalence, commonest causes, and severity of home accident injuries and their effects on children who present to the emergency department (ED) of a university-tertiary hospital in Oman. They conducted a retrospective study among children aged ≤ 18 years old who presented with home accidents to the ED between January and June 2017. A checklist for data collection was designed to include demographic data, causes and effects of home accidents, and treatment outcomes. The data was retrieved from the hospital electronic patient records.

A total of 1333 children presented to the ED over six months as a result of unintentional home accidents, giving a prevalence of 7.7% from all children who visited the ED. There was a significant male to female ratio of 1.7:1. The most prevalent causes for home accidents were 'falls' in 716 (53.7%) children, followed by 'struck by/against-animate/inanimate mechanical force' in 201 (15.1%) children. 'Poisoning' was the third major cause in 117 (8.8%) children. Severity scale showed that around 36.0% of children suffered from severe injuries and 5.4% were admitted to the hospital.Despite this study being a single-center study in Oman, it indicates a high prevalence and severity of unintentional home accidents among children. The study findings suggest the need for implementing strategies to raise public awareness of child safety at home and to improve the preparedness of healthcare providers in ED to deal with such accidents.

Definitionof terms:

1- **Home injuries**:

The term injury is derived from Latin, meaning damage or impairment, whether this damage is accompanied by tissue tearing due to external influences, which is usually sudden and may hinder or prevent the function of the affected part. The body's tissues are also exposed to internal or external factors that cause histological (shape of the affected organ), physiological (inability of the affected organ to perform its natural functions), or mechanical (inability to perform motor functions) changes, which may be visible or invisible. (Imad Youssef, 2019)

Operational Definition: In this study, an injury is defined as a set of events that cause harm to a child due to one of the following causes (burns, falls, fractures, traffic accidents, drowning, or parental discipline) for the group of individuals aged 5-17 years, whose mothers or caregivers were surveyed in the Multiple Indicator Cluster Survey MICS 6.

2-**Child**:

The child is a noun for a young person, and the child is a small person from everything. The term child is used to refer to a young person from birth until puberty. The definition of a child varies depending on the sciences and directions. According to psychologists, a child is an individual from the end of infancy to puberty, but in law, a child is any person who has not reached the age of eighteen. The concept of childhood and the child is socio-cultural, meaning that the definition of childhood depends on the communities and cultures in which children live and grow up, and the historical context is also important in defining the meaning of childhood. (Masouda Bayousef, 2018, p. 22)

Operational Definition: In this study, a child is defined as the group of Algerian individuals aged between 5 and 17 years who were exposed to all types of injuries and were placed under observation during the Multiple Indicator Cluster Survey MICS 6, which was conducted in Algeria from December 25, 2018, to April 22, 2019.

3- The Multiple Indicator Cluster Survey (MICS) was conducted in Algeria during the period from December 25, 2018, to April 22, 2019. The survey aimed to complete the previous surveys: MICS1 in 1995, MICS2 in 2000, MICS3 in 2006, and MICS4 in 2012. The purpose of this survey is to provide updated information on the health, economic, and social situation of children and women, and to provide information on the characteristics of households in which children and women live.

The survey aims to achieve a number of **international goals**, including:

- Improving the Millennium Development Goals,
- Improving the " World Fit for Children" goals,

National goals, including:

- improving data specific to child and women development indicators,
- assessing gaps in development fields, identifying new priority areas,
- obtaining multiple indicators, enabling international comparison, *
- providing precise indicators for sectoral development programs.

Several parties contributed to the implementation of the Multiple Indicator Cluster Survey MICS4, including the Ministry of Health, Population and Hospital Reform, the National Statistics Office (ONS), the United Nations Population Fund (UNFPA), and the United Nations Children's Fund (UNICEF). The survey was funded by national and international sources, including the United Nations Population Fund (UNFPA) and the United Nations Children's Fund (UNICEF).

Method study:

This study relied on the descriptive survey method, which was conducted in Algeria from December 25, 2018, to April 22, 2019.Sample: The source of data in this study is the multi-indicator longitudinal survey conducted in Algeria, where a sample composed of 31,325 households

was drawn, covering a total of seven (7) geographical areas of urban planning, which were selected based on the National Program for Regional Planning (Official journal 2021)

In the first stage, a total of 1,253 plots were drawn, distributed over seven urban planning areas (179 x 7 = 1,253) Then, 25 households were drawn from each plot (31,325 = 1,253 x 25), resulting in a total of 31,325 households under consideration. To provide a clearer picture of the study community, the units are distributed based on some study variables

Table 1: Distribution of sample units according to gender and place of residence.

Gender	frequencies	(%)
Male	1588	62,45
Female	955	37,55
Total	2543	100

Place of residence	frequencies	(%)
Urban	1766	69,45
Rural	777	30,55
Total	2543	100

Source: made by researchers based on data of the multi-indicator longitudinal survey conducted in Algeria.

The previous table shows the distribution of sample units according to some demographic variables, such as gender and place of residence. It is found that 62% of the sample units are male and 38% are female. The difference between the genders is due to random sampling, as the gender ratio is approximately equal in the Algerian community, with 50.9% males and 49.1% females (https://populationtoday.com)

Regarding the distribution of children who have been exposed to infection according to the place of residence, it is found that approximately 70% of the units live in urban areas, while 30% live in rural areas. The difference is clear between urban and rural areas in terms of the number of sample units, which is consistent with the general distribution of the population according to the place of residence, where 75.3% of the population in Algeria lived in urban areas in 2024(https://data.albankaldawli.org/indicator)

Table 2: Distribution of sample units according to the urban planning area.

Urban planning area	Frequencies	(%)
North	1598	62,84
High plateaus	730	28,71
South	215	8,45
Total	2543	100

Source: made by researchers based on data of the multi-indicator longitudinal survey conducted in Algeria.

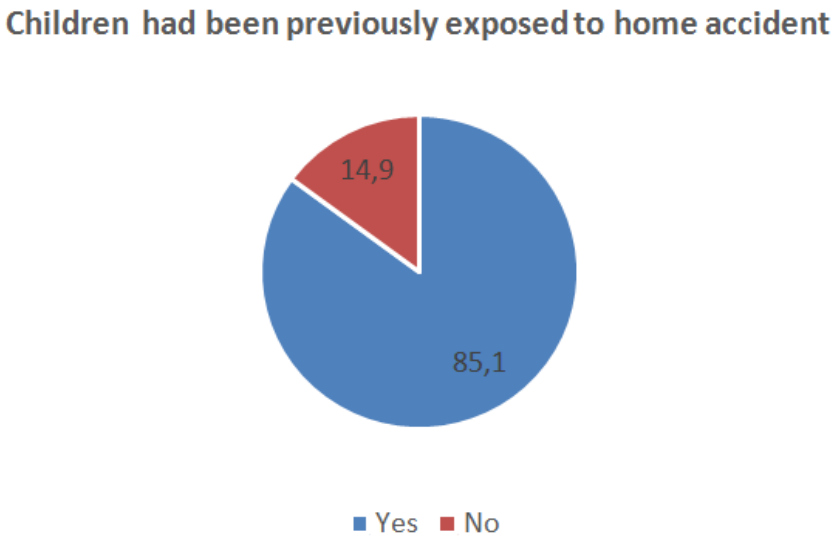
The distribution of sample individuals across urban areas reveals a significant correlation with the distribution of the population in Algeria in general. It is observed that the largest proportion of the population in Algeria resides in the northern regions, which record the highest population densities. Conversely, this proportion decreases as we move towards the south, passing through the highlands and inner regions. In this study, the number of sample units extracted from the northern regions was 1598 children, equivalent to 63% of the total children who were exposed to accidents.

This was followed by the highlands with a proportion of 29%, and finally the southern region with a proportion of approximately 9%.

Accident Rates:

The total number of cases involved in the study was 2543 children, representing those who were exposed to accidents. This proportion accounted for 15% of the total children under observation (17,020 children) in the age range of 5-17 years. The following figure provides a clear image of the proportion of children who were exposed to accidents.

Figure 01: Percentage of Children Exposed to Accidents



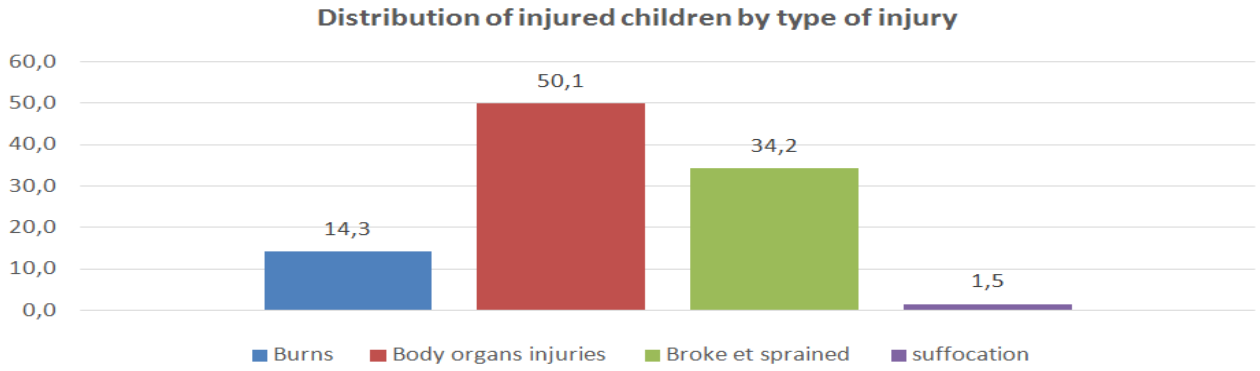
Source: made by researchers based on data of the multi-indicator longitudinal survey conducted in Algeria.

Through Figure 01, it is evident that 15% of children have been exposed to injuries, while 85% have not encountered any type of injuries that children may face during their childhood. This period is characterized by the child's inclination towards exploring the environment they live in, whether inside or outside the home. This curiosity sometimes leads to exposure to risks such as falls, burns, fractures, etc. Several factors influence a child's injury, including the external environment, the home environment, parents' vigilance, especially the mother's attention to every detail during the child's growth stage, and more.

Types of Injuries:

The type of injury a child experiences varies depending on the surrounding circumstances, the child's gender, age, and level of activity. Therefore, the type of injury is influenced by several factors. The following figure illustrates the distribution of children affected by the type of injury they have experienced.

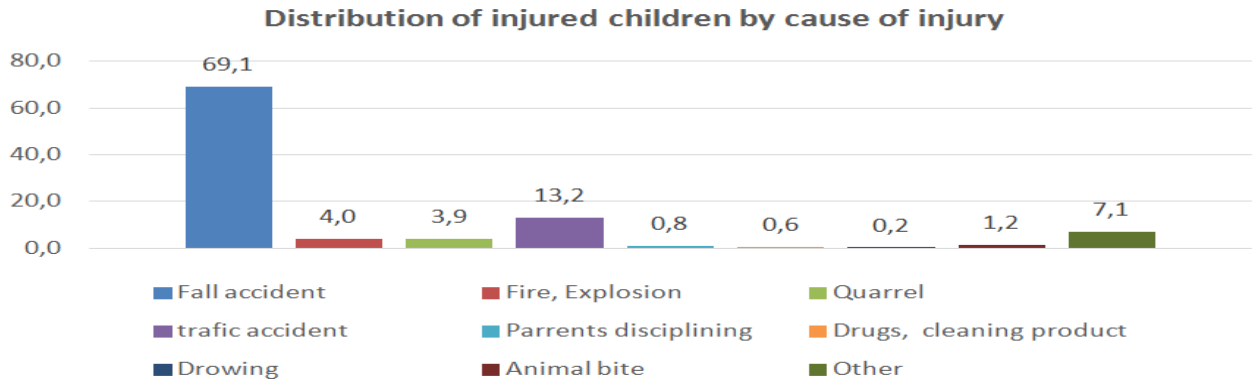
Figure 02: Distribution of Injured Children by Type of Injury



Source: Prepared by the researcher based on survey data and SPSS 26 program.

Through Figure 02, we can observe the types of injuries that children are usually exposed to during their childhood. The figure shows that half of the injured children suffered from injuries in various parts of the body, which caused them pain or disabilities depending on the severity of the injury. This type of injury is usually the result of falls, objects falling on children, fights, etc. This is a consequence of the high level of activity that characterizes children and their engagement in activities such as playing or imitating adults. The second most common type of injury is sprains and fractures, followed by burns in third place at 14%, and finally, suffocation.The injuries suffered by the children in the study are considered a health problem that may accompany them throughout their lives, especially if the injury causes a permanent disability or impairment. To avoid these situations that may affect children, family members must work to reduce or eliminate the causes of these injuries, which are identified through the following figure.

Figure 03: Distribution of Injured Children by causes of Injury

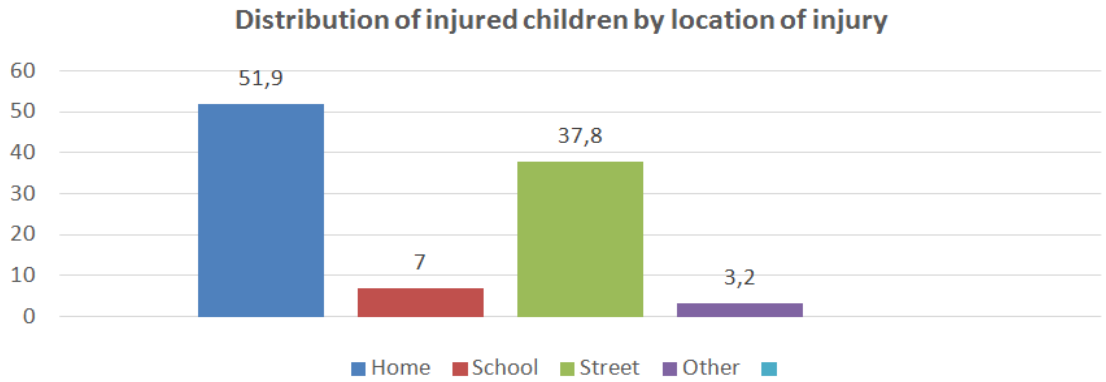


Source: Prepared by the researcher based on survey data and SPSS 26 program.

The difference in the causes of injuries that children have experienced is clearly evident. It appears that the largest cause of injuries is falls, accounting for 69% (more than two-thirds) of the cases. This is a result of the high level of activity that characterizes children, as well as the presence

of obstacles and objects that have led to these falls. Therefore, family members must take a series of measures to prevent this type of injury. Traffic accidents are the second most common cause of injuries among children. The remaining percentages are distributed among fights, fires, and other causes. The above points indicate that the causes of injuries can be either in the immediate environment in which the child grows up (the home) or the broader environment outside the home. Burns and suffocation usually occur within the immediate environment, while other injuries can happen both inside and outside the home, as the questions directed to the housewife determined the location of the injury, which is illustrated in the figure below.

Figure 04: Distribution of Injured Children by Location of Injury

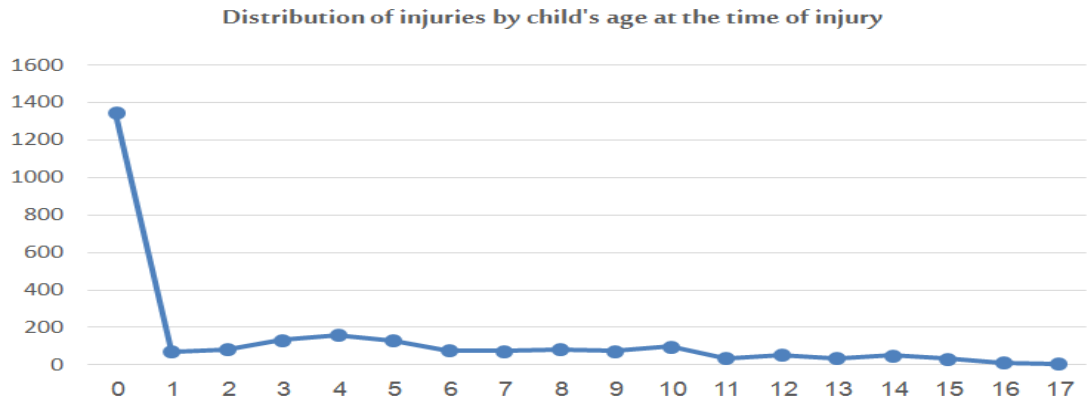


Source: Prepared by the researcher based on survey data and SPSS 26 program.

The difference in the location where Algerian children are injured is very clear. We note that around 52% of the injuries occurred at home, which is natural considering that the individual spends the majority of their time at home, which is the closest place to the child's presence.This information is quite important as it provides an indicator for members of the community to consider the conditions in which the child is raised and work to isolate all the causes of injury that the child may face, such as keeping children away from dangerous areas (the kitchen, workshops and warehouses, sources of electricity, etc.).

Additionally, efforts should be made to keep the home tidy and free of obstacles, especially stairs, corridors, and areas with high activity and movement. Removing or securing carpets to prevent slipping, and avoiding loose clothing that increases the risk of tripping.In the kitchen, it is advisable to keep pot and pan handles facing inward to avoid burns, not leaving the iron unattended after use and disconnecting it from electricity, and storing chemicals, matches, and flammable materials out of children's reach. Avoiding placing hot liquids on the floor, and keeping knives in places that are difficult for children to access.

Figure 05: Distribution of Injuries by Child's Age at the Time of Injury



Source: Prepared by the researcher based on survey data and SPSS 26 program.

Figure 05 above provides a clear picture of the distribution of injuries by the age of the injured child. The peak of the phenomenon in the study sample is recorded before reaching one year of age (between 0 and 365 days), with the number of injuries significantly decreasing from the first year onwards. Injuries during this period are usually related to falling from the bed, suffocation, or other reasons. We can distinguish several periods to divide the curve to avoid commenting on all values. The period from around one year of age to approximately six years old shows significantly fewer accidents compared to those recorded in the earlier period (under one year). The peak occurs at the age of 4 years during this period. What distinguishes this age range is the children's desire to explore both the indoor and outdoor environment of their residence without the ability to discern danger, especially in the early years of this period. The third period on the curve extends from six years old to ten years old, where there is a relatively lower intensity of the phenomenon compared to the previous period. This period marks the entry of students into elementary school and an increase in the child's ability to identify sources of danger. The last period on the curve, extending from 11 years old to 17 years old, shows a significant decrease in the phenomenon as the child ages and transitions from an unconscious stage to a stage where they can almost fully distinguish sources of danger and work to avoid them. At the end of this period, the phenomenon almost disappears at the age of 17.

Post-Injury Behavior:

The response of families, especially mothers, to a child's injury varies. The immediate response after an injury is crucial in reducing its severity. Therefore, the family's response post-injury is a significant factor in mitigating the consequences of the child's injury. The data in the following table pertain to children who have been injured (in all forms), where their mothers were asked about the actions taken (where the injured child was treated) after the injury.

Table 03: Distribution of Sample Units by the Location where the Injured Child was Treated

Location of Treatment	Percentage (%)	Frequency
Home	6,9	176
University Hospital	16,0	408
Hospital	54,2	1378
Multi-Service Clinic	16,2	411
Treatment Hall	1,8	46
Private Clinic	3,9	99
Other	1,0	26
Home	100	2543

Source: Prepared by the researcher based on survey data and SPSS 26 program.

The values in the table indicate that the vast majority of mothers (caregivers) acted in a healthy manner, as they took the injured child to a healthcare facility (university hospital, hospital, clinic, treatment hall), where the percentage of these facilities collectively exceeded 92%. This can be considered a good health behavior that directly contributes to reducing the effects of the injury. This behavior is also a good indicator of the high health literacy of the sample individuals. The response to an injury is influenced by several factors, based on previous experiences or knowledge of the health situation. Child injuries require prompt and proper action, whether initiated by the patient themselves or by their family members. The first step should be seeking treatment from a specialized source to prevent any complications or deterioration of the health condition. Seeking treatment is a strong indicator of the prevalence of a health-conscious culture within the community.In contrast, we find that 176 cases (6.9%) were treated at home, where the reasons for these results vary and are detailed in the following table.

Table 04: Distribution of Sample Units by Reason for Treating the Injured Child at Home

Reason for Home Treatment	Percentage (%)	Frequency
Distance is Far	17,7	31
High Costs	3,0	5
Not Effective	36,4	64
Has Experience	37,5	66
Other	5,4	10
Total	100	176

Source: Prepared by the researcher based on survey data and SPSS 26 program.

The majority of mothers who treated the injured child at home did so because the treatment was deemed ineffective or because the mother had experience with the type of injury the child sustained, with the combined percentage reaching approximately 74%. This can be considered an unhealthy behavior due to the assumption that the injury was not serious or could be treated at home by the

mother or another family member. The table also shows that around 25% of mothers stated that the child was treated at home due to distance, high costs, or other reasons.Overall, the social data on monitoring child injuries indicate that society is now dealing with various injuries children may face in a healthy manner.

Consequently, the normalization of these injuries has led individuals to accept and manage them, making medical follow-up for injuries a daily and spontaneous behavior within the community. The relationship between demographic variables of the child's family and the child's injury occurrence: To understand the factors and variables influencing the variation in children's injury occurrences, injuries are distributed based on certain controlling variables. The following are the variables that may contribute to the differences in injury occurrence among children, varying from one region to another or from one family to another.

Table 05: Relationship between Place of Residence and Child's Injury Occurrence:

			Did the Child Experience an Injury?			Chi-Square Test		
			Yes	No	Total	Value	DF	Statistical Significance
Type of residence	Urban	frequency	1766	9153	10919	36,45	1	0,000
		percentage	16,2	83,8	100			
	rural	frequency	777	5325	6102			
		percentage	12,7	87,3	100			
	total	frequency	2543	14478	17021			
		percentage	14,9	85,1	100			

Source: Prepared by the researcher based on data from the Multiple Indicator Cluster Survey (MICS 6).

The table above illustrates the relationship between the child's place of residence and the occurrence of injuries. The Chi-Square Test was conducted to analyze whether there is a significant association between the child's residence (urban or rural) and the likelihood of experiencing an injury. The results show a statistically significant relationship between the child's residence and the occurrence of injuries, with a p-value of 0.000, indicating a strong association. The difference in the spread intensity of the phenomenon between the two environments is explained by the variation in several factors between them. The urban environment is characterized by high population density and social activity. Children grow up in this environment surrounded by many conducive conditions that encourage movement and exploration, such as the wide availability of toys and numerous friends of the same age, prompting children to seek entertainment and play. Additionally, the urban environment is characterized by a relatively higher level of education and cultural background among parents, often leading mothers to work, which may increase the likelihood of children being exposed to accidents resulting in injuries. On the other hand, the study at hand documents injuries resulting from traffic accidents, which are more prevalent in urban areas than in rural areas. Urban areas experience a higher intensity of traffic-related injuries due to the higher population density

and social dynamics, while rural areas have lower population sizes and densities, with a more dispersed population distribution. Families in rural areas are often larger extended families, fostering social and internal control among individuals, leading to lower crime rates and deviant behavior, and strengthening family cohesion. Consequently, rural areas record fewer injuries compared to urban areas due to the relatively lower incidence of the previously mentioned accident causes that distinguish urban environments. Additionally, rural families, often extended families, exhibit a larger size, promoting collective care for children, especially by grandparents who play a significant role in child upbringing and care.

Table 06: Relationship between Child's Gender and Injury Occurrence:

			Did the Child Experience an Injury?			Chi-Square Test		
			Yes	No	Total	Value	DF	Statistical Significance
Gender	male	frequency	1588	7271	8859	129,45	1	0,000
		percentage	17,9	82,1	100			
	female	frequency	955	7206	8161			
		percentage	11,7	88,3	100			
	total	frequency	2543	14477	17020			
		percentage	14,9	85,1	100			

Source: Prepared by the researcher based on data from the Multiple Indicator Cluster Survey (MICS 6).

The child's gender is considered a significant determinant for their susceptibility to injuries, as evidenced by the difference observed between genders in the number (percentage) of recorded injuries in the study sample. The percentage of males who experienced injuries was 18% out of a total of 8859 children in the study, while this percentage was 11.7% for females. The calculated relationship test value between the two variables was 129.45 with a statistical significance of 0.000 (less than 0.05), indicating a relationship between the child's gender and their susceptibility to injuries. The difference in the intensity of exposure to the phenomenon between genders can be explained by several reasons, summarized as follows:

- The care received by females within Algerian families compared to males, as females naturally require protection.
- The tendency of males to venture outside the home and engage in activities (playing, entertainment, etc.) and utilize the external environment (streets), posing an additional risk of serious accidents compared to females who engage in safer play activities within the home.
- Variations in the types of games played by each gender, where boys tend to explore various types of play activities with a higher risk of injury (riding bikes, playing football, swimming in unprotected areas, etc.), while girls tend to engage in safer play activities (dolls, fabric-made toys, non-hazardous games) within the confines of the home.

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Table Number (07): The Relationship of the Mother's Occupational Status to the Child's Exposure to Injury.

			Did the Child Experience an Injury?			Chi-Square Test		
			Yes	no	Total	Value	DF	Statistical Significance
Moter's occupational status	Worker	frequency	289	1379	1668	8,21	1	0,000
		percentage	17,3	82,7	100			
	House wife	frequency	2253	13083	15336			
		percentage	14,7	85,3	100			
	total	frequency	2542	14462	17004			
		percentage	14,9	85,1	100			

Source: Prepared by the researcher based on data from the Multiple Indicator Cluster Survey (MICS 6).

Based on the information provided in the query, when analyzing the previous table, it is evident that out of a total of 1668 children who were injured, 289 children (17%) had mothers who worked outside the home, while this percentage was 14.7% for mothers who stayed at home. This indicates a difference of approximately three percentage points between mothers based on their occupational status. The Chi-square test value was 8.21 with a significance level of 0.004 (less than 0.05), indicating a relationship between the mother's occupational status and the child's exposure to injury.

This result can be explained by the fact that mothers who stay at home are constantly present with the child, especially during their early stages of life, which helps reduce the risk of accidents. On the other hand, children whose mothers are employed are more prone to accidents. Mothers are usually more attentive to caring for the child compared to other family members (siblings, spouses) for mothers who leave the child with another family member. Additionally, some mothers resort to leaving the child with a caregiver or in daycare, which may increase the child's risk of injury, especially since caregivers and daycare centers care for multiple children, leading to potential conflicts or other types of accidents (falling while playing, etc.).

Regarding the relationship between geographic location and child injury: when distributing children's injuries based on geographic location, specifically urban programming, we obtain the values in the following table.

Table 8:the relationship between geographic location and child injury

			Did the Child Experience an Injury?			Chi-Square Test		
			Yes	No	Total	Value	DF	Statistical Significance
Geographic	north	frequency	1599	9020	10619			
		percentage	15,1	84,9	100			

area	High land	frequency	730	4002	4732	6,89	2	0,032
		percentage	15,4	84,6	100			
	south	frequency	214	1455	1669			
		percentage	12,8	87,2	100			
	total	frequency	2543	14477	17020			
		percentage	14,9	85,1	100			

Source: Prepared by the researcher based on data from the Multiple Indicator Cluster Survey (MICS 6).

From the table, we observe that the percentages of children exposed to hazardous substances are equal between the north and the highlands, both at 15%. In contrast, the south has a lower percentage of 13%. This difference is statistically significant, with a chi-squared test value of 6.89 and a p-value of 0.032 (less than 0.05), indicating a correlation between the geographic area and the child's exposure.This lower exposure rate in the south compared to the north and highlands can be attributed to:

1- Lower population density in the south and less social mobility, which means the child has a wider space for play and leisure compared to the north and highlands where the child's space is limited and crowded. The table below provides a more detailed picture of the population distribution in the previous areas.

Table 9: Area Population Distribution:

	South	Hight land	North
Area	83	12.7	4.3
Population	8.2	27.3	64.5

Source: (nadjia touati, 2018, p 103)

2- We previously mentioned that a portion of the injuries is due to traffic accidents, and since the population density is low in the south, we also note a decrease in the number of vehicles in this region compared to the north and the highlands. Consequently, there is a decrease in the number of injuries resulting from this factor. Approximately half of the vehicles in Algeria are distributed among only five states, all located in the north: Algiers (26.32%), Oran (5.74%), Blida (5.17%), Constantine (3.61%), and Tizi Ouzou (3.33%).(www.elbilad.net)

Study Results:

At the end of this article, we can summarize the consequential results of the study presented in the text:

- The number of children who were susceptible to injury was 2543 children, accounting for 15% of the total children in the age group of 5-17 years. Conversely, 85% did not experience any type of injury.
- Half of the injured children suffered injuries in various parts of the body.

- These types of injuries are usually caused by falls, impact from solid objects on children, fights, etc.
- The primary cause of injuries is falls, accounting for 69%, with approximately 52% of injuries occurring at home.
- The peak of injuries in the study sample is before reaching one year of age (between 0 and 365 days), with a noticeable decrease in injuries starting from the first year.

The vast majority of mothers acted in a healthy manner, taking the injured child to a healthcare facility (university hospital, hospital, clinic, treatment hall), where the percentage of these facilities collectively exceeded 92%, compared to 6.9% of injuries treated at home. The majority of mothers who treated the injured child at home did so, because the treatment was not urgent or because the mother had experience, with the percentage totaling approximately 74%.

- There is a relationship between the child's residential environment and their exposure to injury.
- There is a relationship between the child's gender and their exposure to injury.
- There is a relationship between the mother's occupational status and the child's exposure to injury.
- There is a relationship between the geographic area and the child's exposure to injury.

Conclusion:

During the early stages of their lives, some children experience accidents resulting in injuries that may have significant psychological or physical effects. These injuries are often beyond the child's responsibility, and therefore, the surrounding conditions play a crucial role, especially since protecting the child from these risks is primarily the responsibility of the family members and especially the mother. These accidents typically include falls, burns, choking, drowning, poisoning, fights, parental discipline, etc. The severity of these incidents varies depending on controlling factors such as the residential environment, the child's gender, the mother's occupational status, and the geographic area. This study is significant as it addresses a crucial topic in individuals' lives. Injuries like burns, fractures, or choking can cause psychological, physical, or neurological disabilities that sometimes hinder the child from enjoying their childhood and life in general.

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