

## Urbanization and domestic accidents in an Iranian community

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### Abstract

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**Background:** Accidents, such as domestic accidents, and the resulting injuries are presently a matter of concern in communities. Some factors such as urbanization cause an increase in the incidence of accidents for recognized and unrecognized reasons. The aim of the present study was to investigate the incidence of domestic accidents among a group of families who had migrated to the determined urban area (Rafsanjan County, Kerman Province, Iran) and compare the results with that of urban families in the last year.

**Materials and Methods:** In this descriptive study, we compared the 1-year incidence rate of domestic accidents among 115 families who had migrated to Rafsanjan County from rural areas and 100 families who had lived in Rafsanjan throughout their life. Data were collected during 3 years (2009-2012) using the study checklist during interview sessions. Families were recruited via urban health centers. All indoor accidents and injuries which were serious enough to require medical intervention were considered as domestic accidents. Data were analyzed in SPSS software using parametric and non-parametric tests.

**Results:** The mean age of injured individuals in migrated and urban families were  $35.9 \pm 18.7$  and  $30.7 \pm 20.6$ , respectively. In addition, 22 cases of injuries were reported among urban families (1-year incidence rate = 220 cases per 1000 families) and 37 cases were reported among migrated families (1-year incidence rate = 322 cases per 1000 families). There was a significant difference between these incidence rates ( $P < 0.01$ ).

**Conclusions:** Our finding showed that individuals who migrate to an urban area are at a higher risk of experiencing domestic accidents compared to those who are familiar with the urban lifestyle. This might be due to the novelty of the city lifestyle for those who have immigrated to the urban area from rural regions. More investigations are needed to shed more light on this phenomenon.

**Keywords:** Urbanization, Accidents, Urban, Families, Community.

### Introduction

Many cases of disability and death in both developed and developing countries occur due to accidents, including domestic accidents, and the resulting injuries (1). On the other hand, urbanization has been a matter of concern in human communities for more than a century. It has brought many advantages and disadvantages for people (2, 3). The study by Moore on urbanization history in human communities

shows that some communities are faced with more disadvantages compared to some others (4). For many years after the Alma Ata Declaration on conducting projects to implement the principles of Primary Health Care (PHC), community based health care programs were started in the rural areas of developing countries.

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However, urban health was not seen as a special health problem (4). Nevertheless, factors such as employment opportunities generated major population movements to urban centers in developing countries. This sudden concentration of large populations in small geographical areas has resulted in the urban health problems of the developing world (4). New lifestyles among people after their immigration to urban areas could cause damages to them. Because living in the countryside is very different from that in cities. Therefore, these people must adapt to the new life in cities. This might also be experienced by people who are faced with industrialization in their communities (5). Due to the resulting problems, low-income countries are struggling to control urbanization growth and stop the development of unplanned communities (5).

Gong et al. reported that growing disease burden in urban areas due to nutrition and lifestyle choices is a major public health challenge for immigrants, as are troubling disparities in health care access, vaccination coverage, and accidents and injuries in China's rural-to-urban migrant population (6).

If the process of adaptation to the new lifestyle takes a long time, there will be a higher chance of individuals facing the risks of the new circumstances. For instance, when cars come into a new community for the first time, people are faced with the risk of traffic damages if they do not know how to use them in a safe way (7).

Domestic accidents are a worldwide public health problem and are related to many factors such as lifestyle (8). Factors related to domestic accidents vary from carelessness and overconfidence to environmental factors (9).

Cultural and social factors are classified as environmental factors (10) and urbanization could be significantly related to these factors.

In this study, we attempted to measure the effect of new lifestyle (urbanization) on the risk level of domestic accidents among Iranian families who had come to the city in the last year. The

results were compared to families who had lived in the city throughout their life.

## Materials and Methods

The checklist of this descriptive study was completed for two groups of Iranian families who were living in Rafsanjan County, Kerman Province, Iran.

The first group consisted of 100 families who had lived in the urban area throughout their life (urban families). The second group consisted of 115 families who had lived in the urban area for less than 3 years (migrated families) and had emigrated from the countryside to the city. Families were recruited to participate in the study by urban health centers. Written consents were obtained from all families (mostly mothers) who accepted to participate in the study. The Ethics Committee of the Rafsanjan University of Medical Science approved the objectives of the study. Families were selected from the two lists taken from 5 health centers. The first list contained a complete list of families who were registered for many years as they had always lived in the urban area (urban families). The second list contained a list of families who had experienced immigration to the urban area from a rural area (migrated families). Families invited to the study were randomly selected from these two lists.

In our study, domestic accident was defined as an accident (unintentional injuries) which took place at home (inside and/or outside of the building). Any accident which took place outside of the home (such as traffic accidents or accidents in work places or public places) was excluded from our study.

There were 15 items on the checklist in 2 sections, demographic items and special items about the history of domestic accidents. The checklist was completed by a trained expert who interviewed parents (mothers and fathers). Parents were interviewed in their homes or in the health centers. Medical records in the health

centers were also used for some injured people. Information about age, gender, families' occupation, families' social class, time of accident (season), the place of accident at home, cause of accident, type of resulting injuries, and long-term outcomes of accidents were collected. Data were analyzed using SPSS software (version 16, SPSS Inc., Chicago, IL, USA) and both parametric (t-test and ANOVA) and non-parametric (chi-square) tests were used to compare groups.

**Results**

In the present study, 215 Iranian families participated. They were divided into 2 different groups of urban families and migrated families.

We found that overall 59 cases of domestic accidents took place during the last year among the respondents, giving a total of 274 cases per 1000 families. Of these, 22 cases were reported from urban families (1-year incidence rate of domestic accident = 220 cases per 1000 families) and 37 cases were reported among migrated families (1-year incidence rate of domestic accidents = 322 cases per 1000 families). There was a significant difference between the two groups in terms of incidence rate ( $P < 0.01$ ).

Mean age of all injured people was  $32.75 \pm 19.8$  years. Mean age of injured people among urban families and migrated families was  $35.9 \pm 18.7$  and  $30.7 \pm 20.6$ , respectively.

**Table 1: Distribution of injured people in the two groups of urban and migrated families based on age**

| Age   | Urban families | Migrated families | Total     |
|-------|----------------|-------------------|-----------|
|       | N (%)          | N (%)             | N (%)     |
| 0-9   | 2(8.7)         | 5(13.9)           | 7(11.9)   |
| 10-49 | 12(52.2)       | 22(61.1)          | 34(57.6)  |
| 50 <  | 9(39.1)        | 9(25.0)           | 18(30.5)  |
| Total | 23(100.0)      | 36(100.0)         | 59(100.0) |

There was a higher proportion of injured people under 10 years of age among migrated families (13.9%,  $n = 5$ ) compared to urban families (8.7%,  $n = 2$ ). There was a lower proportion of injured people older than 50 years of age among

urban families (25%,  $n = 9$ ) in comparison with migrated families (39.1%,  $n = 9$ ), but the difference was not statistically significant (Table 1).

**Table 2: Injuries due to domestic accidents in the two groups of urban families and migrated families**

| Injury                     | Urban families | Migrated families | Total    |
|----------------------------|----------------|-------------------|----------|
|                            | N (%)          | N (%)             | N (%)    |
| Bruising/internal bleeding | 9(39.1)        | 0(0.0)            | 9(15.2)  |
| Deep cut/wound             | 7(30.5)        | 14(38.9)          | 21(35.7) |
| Burn                       | 5(21.7)        | 9(25.0)           | 14(23.7) |
| Poisoning                  | 2(8.7)         | 6(16.7)           | 8(13.5)  |
| Bone fracture              | 0(0.0)         | 7(19.4)           | 7(11.9)  |
| Total                      | 23(100.0)      | 36(100.0)         | 59(100)  |

There were 20 (out of 22) (91%) female cases among urban families and 28 (out of 37) (76%) female cases among migrated families. There was no significant difference between these proportions.

The most frequent injuries due to domestic accidents among all families were deep cut (35.7%, n = 21) and burn (23.7%, n = 14). Table 2 shows the distribution of cases in the two groups of urban and migrated families based on the type of injury due to domestic accidents. There was no bruising/internal bleeding among migrated families, whereas about 40% of resulting injuries among urban families was

bruising/internal bleeding. No bone fractures were reported among urban families; however, about 20% of resulting injuries among migrated families were bone fractures.

The causes of domestic accidents in the two groups of urban and migrated families are reported in table 3. As table 3 shows, the most frequent cause of domestic accidents among urban families was falling (39.1%), whereas the greatest proportion of injuries among migrated families were due to contact with sharp objects (38.9%). The second most frequent cause of domestic accidents in migrated families was contact with hot objects/liquids (27.8%).

**Table 3: distribution of injured people in the two groups of urban families and migrated families based on the cause of accident**

| Cause of domestic accidents                      | Urban families | Migrated families | Total     |
|--|----------------|-------------------|-----------|
|  | N (%)          | N (%)             | N (%)     |
| <b>Falling</b>                                   | 9(39.1)        | 7(19.4)           | 16(27.1)  |
| <b>Contact with sharp objects</b>                | 7(30.4)        | 14(38.9)          | 21(35.6)  |
| <b>Contact with fire or hot objects /liquids</b> | 3(13.1)        | 10(27.8)          | 13(22.0)  |
| <b>Poisoned by chemicals</b>                     | 2(8.7)         | 5(13.9)           | 7(11.9)   |
| <b>Electricity</b>                               | 2(8.7)         | 0(0.0)            | 2(3.4)    |
| <b>Total</b>                                     | 23(100.0)      | 36(100.0)         | 59(100.0) |

## Discussion

Our results showed that the overall 1-year incidence rate of domestic accidents among migrated families (322 per 1000 families) was significantly higher than that among urban families (220 per 1000 families). This difference shows that individuals who came to the urban area from rural areas were at a higher level of risk of domestic accidents compared to those who had lived in the urban area for many years. This higher level of risk can be due to the new style of life or/and new environment and circumstances. Although these results are derived from a descriptive study, they show that interventions should be conducted to decrease the risk level of injuries due to domestic accidents among families who migrated from a

rural to urban area. People who migrate to an industrialized area should be aware of the new situation. They must know how to utilize the new technology which is an unavoidable part of living in cities.

There is no literature to show the incidence of domestic accidents among people who migrate from rural areas to urban areas. However, many documents exist showing the causes of mortality across different immigrant groups such as that conducted by Fedeli et al. (11). The relationship between working conditions and their effects on migrant workers' health has also been reviewed by Ronda-Pérez et al. in Spain (12, 13). They stated that the relationship between immigration, work, and health is one of the most important challenges in occupational health at present (12, 13). Ronda-Pérez et al. reviewed 20 studies

including 13 with quantitative methodologies and 7 qualitative studies. Specific health problems related to work (primarily occupational accidents), disability, and differences in working conditions and employment were the main topic of their research (12). They reported that there was a higher incidence of injury and a higher exposure to psychosocial factors among workers who were immigrants (12). Although all these researches emphasize the importance of the effect of migration on health (especially occupational health) and the lifestyle of people who immigrate, no data has been reported on the incidence of domestic accidents among immigrants (12-14). Our research showed that domestic accidents among immigrants from rural areas to urban regions could be an important health problem among this group of people as a feature of urbanization consequences.

We found that among migrated families, a higher proportion of injured people were below 10 years of age compared to urban families. There was no significant difference between these proportions, but our results show that this age group of migrated families should be targeted in prevention programs for domestic accidents. Studies similar to the survey conducted by Panatto (15), who investigated factors related to injuries due to domestic accidents among elderly people, are needed to find factors related to domestic accidents among children. Caffo et al. studied the psychological aspects of traumatic injury in children and declared that family support may be helpful in the elimination of psychological factors responsible for injuries among children (16). In case of domestic accidents among children, although family support might help with this problem, support from the society may be of higher priority. The results illustrated in table 2 show that 19.4% of injured people in migrated families were suffering from bone fracture,

whereas there were no cases of bone fracture among urban families. On the contrary, about 40% of injured people in urban families had bruising/internal bleeding, but there was no such injury in migrated families. These results should be taken into consideration in prevention programs for domestic accidents among both urban and migrated families.

Our findings also showed that contact with hot or sharp objects is the most frequent cause of domestic accidents among migrated families. However, falling was the most frequent cause of domestic accidents among urban families. Many studies have been conducted to find factors related to falling in communities (17, 18). These results show that migrated families who were less familiar with new equipment in their new houses were not able to use them correctly. Thus, they should be taught the safe way of working with the new equipment. However, more investigations are needed to shed light on these discrepancies.

### **Conclusion**

We can conclude that migration from rural to urban regions in which many features of living are related to different aspects of urbanization could have some negative consequences for people who do not know how to cope with the city lifestyle. The designing of programs are recommended to help immigrants with the circumstances of their new life in urban areas. These programs should be targeted at preparing individuals who have migrated to the cities based on their new lifestyle both for indoor and outdoor conditions. Traffic-related accidents pose a major public health threat among migrants. In addition, domestic accidents could also have important impacts on their health. To address health problems, innovative health policies focused on the needs of migrants along with research that could increase knowledge on urban population exposures are needed.

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**Conflict of interest:** Non declared

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