

1 **Prevalence and determinants of home accidents among Turkish older men and women**

2 **Abstract**

3 **Background:** Home accidents are a significant public health issue in developed and developing
4 countries. The present study aims to identify the factors associated with home accidents among
5 older individuals in Türkiye.

6 **Methods:** Microdata obtained from the Türkiye Health Survey conducted by the Turkish
7 Statistical Institute (TUIK) in 2019 and 2022 were utilized in the present study. Binary logistic
8 regression analysis was used to determine factors influencing home accidents.

9 **Results:**

10 **Conclusion:**

11 **Keywords:** Older individuals, home accident, discrete choice model, binary logistic regression,
12 Türkiye

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14 **1. Introduction**

15 Home accidents are a significant public health issue in developed and developing countries (1).
16 Home refers to where older individuals spend most of their daily time, thus increasing their
17 likelihood of experiencing any accidents at home. Home accidents are more common among
18 older individuals and can lead to serious health consequences (2). Individuals aged 65 and
19 above are particularly at high risk of home accidents due to physical, psychological, and social
20 impairments. Musculoskeletal problems and sensory and motor function loss in this group
21 increase the risk of accidents (3). Home accidents are assumed to be unintentional and can range
22 from minor injuries to fatalities. These accidents can occur within the home and in surrounding
23 areas such as garages, gardens, terraces, and stairs (4). While unintentional home and

24 recreational injuries pose a risk for individuals aged 85 and older, outdoor injuries also pose a
25 risk for younger, older individuals (aged 75-79) (5).

26 Home accidents represent a significant health problem in terms of morbidity and mortality at
27 older ages (6). The frequency of home accidents is found to be three times higher in women,
28 2.7 times higher in individuals living with children, 2.3 times higher in visually impaired older
29 individuals, and 2.7 times higher in older individuals with poor health status. Moreover,
30 advancing age is considered a risk factor for home accidents (7). Various home accidents
31 include falls, burns, crushes, cuts, and electric shocks (8). Around 80% of injuries that
32 necessitate medical attention take place within the home environment, with a significant portion
33 of these injuries, approximately two-thirds, being classified as serious injuries, predominantly
34 resulting from falls and burns (5).

35 Similar to the global trend, the older population in Türkiye is rapidly increasing (9). While the
36 global average older population ratio was 9.9% in 2022, Türkiye's older population ratio of
37 9.8% is close to the global average (10). These data indicate that Türkiye has a significantly
38 more ageing population (11). The prevalence of older individuals experiencing at least one
39 accident in Türkiye is 38.6%, with falls being the most common accident at 63.3% (6). As
40 reported in another study, more than half of the older population had experienced a home
41 accident in the previous year (59.4%), with falls (70.2%) and kitchen accidents (31.7%) ranking
42 at the top (12). Epidemiological characteristics of injured patients were examined in Tehran,
43 where traffic accidents and falls were identified as the two most common causes of injury (13).

44 Falls in the home environment account for over 33% of accidents and are the second leading
45 cause of death and the main cause of injury in more than 41.2% of cases. Falls during patient
46 admissions also impose additional burdens and costs on the healthcare system (14). The total
47 medical cost for treating fatal and non-fatal fall injuries in older adults exceeded \$50 billion in
48 the USA in 2015 (15). "Falls" occurring in the bathroom, hallway, living room, or bedroom,

49 originating from the floor or stairs, can result in doctor visits and hospitalizations (1). Factors
50 contributing to increased home injuries include advanced age, economic hardships, obesity, and
51 comorbidities (5). Among older adults living in the community, a significant proportion of falls,
52 ranging from 10% to 38%, lead to non-fatal injuries, hospitalizations, disability, or a decline in
53 independence (16-18). Various risk factors have been identified in association with falls,
54 including advanced age, a history of previous falls, muscle weakness, difficulties with walking
55 and balance, dementia, impaired vision, arthrosis, diabetes, stroke, Parkinson's disease, and
56 urinary incontinence (19).

57 Burns constitute another type of home accident in older individuals. Burn injury is one of the
58 most devastating types of trauma affecting millions of people worldwide, leading to severe
59 morbidity and mortality, with individuals aged 65 and above being the most affected
60 demographic group. The presence of comorbidities in older individuals leads to higher
61 morbidity and mortality in burns due to age-related changes in the central and peripheral
62 nervous system (20).

63 Older individuals may also experience traumas as a result of accidents that occur within their
64 homes. These traumas can have severe consequences for older adults, leading to increased rates
65 of illness and death (21). The proportion of older individuals presenting to Level I and II trauma
66 centers was 23% in 2003, which increased to 30% in 2009 (22). This rate is expected to reach
67 39% by 2050 (23). The cost of home accidents is estimated to be 3.5 times higher than that of
68 traffic accidents (24).

69 Decreased capacities of older individuals often result in limitations in daily life activities.
70 Ageing and declining individual capacities increase the prevalence of disease and disability
71 among older individuals. Living at home, associated with independence and autonomy-related
72 physical, psychological, and psychosocial benefits, is a desired and essential goal for older
73 individuals (25). Therefore, it is necessary to examine the factors contributing to home

74 accidents among older individuals to ensure home safety. Hence, this study investigates the risk
75 factors affecting home accidents among older individuals in Türkiye.

76 **2. Method**

77 This section will explain the specifics of the data utilized in the research, the variables
78 categorized as dependent and independent, and the methodology employed in the study.

79 **2.1. Data**

80 The research utilised microdata from the Türkiye Health Survey, published by the Turkish
81 Statistical Institute (TUIK) in 2019 and 2022. The most recent data available from TUIK's
82 health survey is 2022. The Türkiye Health Survey is a significant research endeavour that
83 reflects the entire country and enables national and international comparisons. The dataset
84 offers a wide range of health indicators related to the well-being of infants, children, and adults,
85 along with insights into individuals' access to healthcare services (26).

86 **2.2. Outcome Variables**

87 Older individuals are at risk for home accidents due to their developmental characteristics (2,
88 3).

89 The data obtained from individuals aged 60 and above were used in this study. The study's
90 dependent variable is the occurrence of home accidents, measured by the question, "Have you
91 experienced a home accident resulting in injury in the last 12 months? (Yes, No)." In the
92 established model, the dependent variable categories are assigned 1 if the individual has
93 experienced a home accident and 0 if they have not.

94 **2.3. Independent variables**

95 The independent variables included in the study are those available in the Türkiye Health
96 Survey. These variables were selected as risk factors based on the literature (5, 7, 19, 27-33).

97 The independent variables of this study are gender (female, male), education level (illiterate/less
98 than primary school, primary school, secondary school and above), marital status (single,
99 married), employment status (unemployed, employed), general health status (very good/good,
100 fair, poor/very poor), presence of arthrosis (no, yes), urinary incontinence (no, yes), wearing
101 glasses (yes/cannot see at all, no), experiencing difficulty in carrying or holding items (no
102 difficulty, some difficulty/considerable difficulty/cannot do at all), experiencing difficulty in
103 affording health care services (no, yes), and survey year (2019, 2022).

104 **2.4. Statistical Analysis**

105 Survey statistics in Stata 15 (Stata Corporation) were utilized to address the complex sampling
106 design and weights. Weighted analysis was conducted. Initially, frequencies and percentages
107 were obtained considering the home accident occurrence and years among the older
108 participants. Then, binary logistic regression analyses were employed to identify the risk factors
109 influencing home accidents in older individuals.

110 **3. Results**