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# A comparative study of individual and familial situation as well as history of diseases in female and male patients suffering from stroke



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## ABSTRACT

**Introduction:** The prevalence of stroke is increasing among young populations in Iran while adult populations in other countries. The highest risk factors are related to cardiovascular diseases and blood pressure, and the most prevalent type of stroke is a hemorrhagic stroke. The present study was aimed at comparing individual and familial situation as well as diseases history in female and male patients suffering from stroke admitted in Alzahra, Feyz, and Kashani Hospitals, Isfahan in 2015-16.

**Method:** It is a descriptive quantitative study which included all stroke patients who had referred to Alzahra, Feyz, and Kashani Hospitals in Isfahan. There were 180 records of documented in those hospitals. A researcher-designed checklist was implemented as study instrument. The collected data were analyzed by descriptive and analytical methods using SPSS software.

**Results:** The early diagnosis of 65.6% patients was a stroke. In addition, 86.1% of patients who had a recovery status at release showed that 10.6% of them died. The highest number of mortality caused by stroke was related to hemorrhagic stroke in which hypertension is known as the significant risk factor ( $P < 0.05$ ). It was also concluded that there was no significant difference between female and male patients regarding with age, sex, place of residence, and marital status ( $P > 0.05$ ).

**Conclusion:** According to the present study results, all patients suffering from stroke experience various physical problems; therefore, different factors cause stroke, and physical disabilities are predictable in such patients, and new protocols are required to improve living conditions among such patients.

**Keywords:** stroke, individual-familial situation, history of disease

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## INTRODUCTION

Stroke is the first cerebrovascular disorder in the world and the third cause of death following cardiovascular diseases and cancer. Stroke is also a chronic illness that has profound effects on the patient and his/her family. It is the most prevalent debilitating disorder of the nervous system, leads to numerous social and economic problems to the individuals, families, and society, and causes many complications including motor, sensory, perceptual, communicative, verbal, cognitive, emotional, and psychological defects and intestinal and bladder disorders. Some studies indicated that individual's ability regarding with aspects of life getting worse in around 55%-75% of hemiplegic stroke patients.<sup>1</sup>

In Iran, there is no precise statistics on the prevalence of stroke and the rate of mortality caused by it. However, due to the current advances in diagnosis and treatment, we are faced with a significant number of such patients. A large number of those surviving stroke have a functional disability which leads to their relative or complete reliance on others for their everyday tasks. Most of these patients are treated at home, and the results indicate

that caregivers need help and support to be able to become compatible with the lifestyle.<sup>2</sup>

Hemiplegia is the most remarkable effect of stroke which causes patients to have different degrees of disability in carrying out daily activities and face them with a problem called dependence in home or society. It seems that among healthcare personnel nurses are the most qualified individuals in order to reduce the patients' dependence on others and preserve their independence.<sup>3</sup>

According to the personal situation and disease's history among patients with stroke in England, the results indicate that atrial fibrillation is an important risk factor. Other risk factors respectively include diseases like aneurysms, congestive heart failure, hypertension, age over 75 years, diabetes mellitus, history of the previous stroke, and transient ischemic attack. The results show that most patients suffering from stroke had the history of atrial fibrillation.<sup>4</sup>

Stroke is the third cause of mortality in developed countries and the most prevalent debilitating neurological disease which impact 15 million

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individuals annually. Around one-third of them die as well as another one-third come up with a permanent disability so that it cause highly extraordinary expenses and playing a significant role in health costs for each country. The previous studies result with the risk of stroke doubles with an increase of age after 55 years old. On the other hand, in developing countries including Iran, due to an increase in the level of health, the community is getting older, which necessitates more extensive health care. Old age, hypertension, diabetes, atrial fibrillation, and ischemic heart disease are among risk factors for stroke.<sup>5</sup>

Since recovery is incomplete for those who survive a stroke, and the neurologic deficit is the result, it is useful for health care providers to evaluate the patients' functional outcome from physical and social dimensions to make decisions. The results of the present study can lead to providing specific care in order to improve the lives of those with stroke. The individual's living conditions of before and after stroke need to be evaluated, and since no particular service is defined for those who provide stroke patients with care, an intervention

program that causes minimum stress and maximum improvement needs to be specified.<sup>6</sup>

The present study aimed to compare individual and familial situation and history of diseases in female and male patients suffering from stroke admitted in Alzahra, Feyz, and Kashani Hospitals, Isfahan in 2015-16.

## MATERIALS AND METHODS

It was a retrospective descriptive-quantitative study which included all stroke patients who referred to Alzahra, Feyz, and Kashani Hospitals in Isfahan. There were 180 records documented in those hospitals which selected by using a simple sampling method.

A researcher-designed checklist was applied which included disease diagnosis, causes, conditions at release, reference reason, the current disease history as well as other diseases. The collected data were analyzed by using SPSS software.

The study inclusion criteria that were based on the existing data records and stroke symptoms such as: (1) Having hospital admission record; (2) Admission in neurology or neurosurgery ward; and (3) Admission of stroke by a neurology specialist

The collected data were statistically analyzed using SPSS software. The descriptive results are presented in tables and figures in the form of frequency distribution and mean. For analytical analysis of the data, Chi-square test to examine the place of residence regarding with sex and the conditions of the causes for reference according to the patients' sex. Fisher's exact test was used to check the different causes of the disease and the reason for reference according to the patients' sex, and marital status according to their sex. Independent t-test was also used according to the patients' age and sex.

## RESULTS

This study showed that there were no significant differences between the two groups of men and women in terms of their age, sex, place of residence, and marital status ( $P > 0.05$ ). From study, the overall participants were men (56.1%), the 61-80 years-old-interval predominance (47.8%), and most of them living in urban areas (86.1%)

According to the distribution of participants, the primary diagnosis of 65.6% the patients was a stroke where 34.4% left unspecified. In addition, the final diagnosis of was a stroke (100%).

From the Table 2 it can be shown that around 86.1% of the patients had a recovery status at release, compared with 10.6% patients died, as well as around 2.8% patients released by their willingness.

**Table 1** The distribution of participants based on disease diagnosis status

Diagnosis	Primary diagnosis		Final diagnosis	
	n	%	n	%
Stroke	118	65.6	180	100
Unspecified	62	34.4	-	-
Total	180	100	180	100

**Table 2** The distribution of participants based on their status at release

Status at release	n	%
Recovery	155	86.1
Release at personal willingness	5	2.8
Dead	19	10.6
Follow-up	1	.6
Total	180	100.0

**Table 3** The distribution of participants based on their status at release and final diagnosis

Status at release	n	%	Final diagnosis
Recovery	161	89.4	Stroke
Dead	19	10.6	Cerebral hemorrhage
Total	180	100	

**Table 4** The distribution of participants based on their reason for reference according to sex

Main complaint	Men (n=101)		Women (n=79)		Sig.
	n	%	n	%	
Hypertension	6	5.9	8	10.1	.298*
Heavy language	43	42.6	41	51.9	.213*
Right hemiplegia	25	24.8	19	24.1	.913*
Left hemiplegia	36	35.6	30	38.0	.747*
Drop of consciousness	20	19.8	10	12.7	.202*
Headaches / dizziness	20	19.8	13	16.5	.564*
Nausea and vomiting	11	10.9	11	13.9	.538*
Visual impairment	5	5.0	2	2.5	.469**
Other	0	0.0	2	2.5	.191**

\* Chi-square test \*\* Fisher's exact test

**Table 5** The distribution of participants based on their current disease according to their sex

Current disease	Men (n=101)		Women (n=79)		Sig.
	N.	%	N.	%	
Hypertension	54	53.5	55	69.6	.028*
Diabetes	32	31.7	28	35.4	.595*
Blood fat	15	14.9	10	12.7	.673*
Without disease	39	38.6	18	22.8	.023*

\* Chi-square test

**Table 6** The distribution of participants based on the history of disease

Previous disease	Men (n=101)		Women (n=79)		Sig.
	n	%	n	%	
Heart disease	40	39.6	37	46.8	.300*
Respiratory disease	5	5.0	2	2.5	.364*
digestive Disease	1	1.0	0	0.0	.469*
kidney disease	6	5.9	6	7.6	.659*
Other disease	18	17.8	11	13.9	.480*
Without disease	40	39.6	27	34.2	.455*

\* Chi-square disease

As seen in Table 3, most or patients (89.4%) whose final diagnosis was stroke released with recovery status, while around 10.6% of the patients with cerebral hemorrhage as their final diagnosis has passed away.

According to the Chi-square and Fisher's exact tests results, there is no significant relationship between different causes of disease and the patients' sex observed ( $p > 0.05$ ). Moreover, the Table 4 indicated that the highest percentage of the reason for which the patients had referred was heavy tongue

(42.6% and 51.9% for men and women, respectively). Then, it was followed by left hemiplegia (35.6% and 38.0%) and right hemiplegia (24.8% and 24.1%) based on men and women sex respectively.

The above table shows that the current disease status of hypertension was significantly different in the two groups of men (53.5%) and women (69.6%) ( $p < 0.02$ ). Moreover, 38.6% of the men and 22.8% of the women had no disease, and this difference was significant ( $p < 0.02$ ).

And the last, the Table 5 shows that the highest history of the disease is related to heart disease with 39.6% among men and 46.8% among women respectively. However, there are no significant differences ( $P > 0.05$ ).

## DISCUSSION

This results showed that the most participants were men (56.1%), in a group of 61-80 years aged interval (47.8%), married (87.2%), and lived in the cities. The results of the present study are in line with the previous study conducted by Mehrdokht et al. who stated that the occurrence of stroke in men and women was 50.05% and 49.95%.<sup>6</sup> These results indicated that men experience stroke more than women, because maleness is a non-modifiable risk factor, and female sex hormones such estrogen have a protective effect against cerebrovascular diseases.

According to the sex; however, the results of the present study are not in line with those of the study conducted by Khayatzaheh Mahani who concluded that stroke occurs more often in women than men, which may be attributed to more depression and anxiety disorders among women.<sup>7</sup>

There was no significant difference between the women (49.9%) and men (46.5%) of 61-80 years old, which is in agreement with the results of the study carried out by Haacke, et al. who studied 152 patients of 74-77 years suffering from a stroke.<sup>8</sup> The results of their study that was conducted in Philipps University Marburg showed that there was no significant difference between age and stroke.

According to the collected data, there was no significant difference between married women (83.5%) and men (90.1%) in terms of marital status. In contrast, a study conducted by Jafari et al who considered 128 patients (49.4% men and 50.6% women) suffering from a stroke in Kerman showed that married individuals were provided with enough social support from their family and friends compared to single or divorced ones.<sup>9</sup>

These findings are also in contrast with those of the study conducted by Rogers (2006) who focused on the quality of life for patients with type-2 diabetes and concluded that marriage led to a decrease in

chronic diseases and an increase in recovery process among such patients. The reason for its discrepancy with the present study is that marital status was not specified in most of the records in the current study.

According to the results of the present study, most of the patients (46.7%) had referred to the hospital due to heavy tongue. This result is in line with the previous study which conducted by Kangarlou et al. who studied 30 stroke patients (50-80 years old interval) were admitted to three hospitals and two geriatric centers affiliated with Shemiranat Welfare Organization, Tehran.<sup>10</sup> Their results indicated that patients suffering from a stroke with any type of injury including ischemia, coronary embolism, thrombolytic, or hemorrhagic would experience speech and language disorders; however, the level of disorder is different with any injury.

From [Table 1](#), 65.6% of the patients were diagnosed with stroke in their primary and final diagnosis, which is similar to the findings reported by Ling et al. who studied 118 stroke patients in Oxford with 68 years of average age. They concluded that primary and final diagnosis showed stroke in 42% of the patients.<sup>11</sup>

In addition, [Table 2](#) presented that around 155 patients (86.1%) experienced recovery and 19 (10.6%) died at release. These results are in line with the previous study which conducted by Najafi et al on 100 stroke patients (50 women and 50 men) with an average age of 35-92 years. They suggested that 37 patients (43%) dies and 73 (57%) were released with recovery.<sup>12</sup>

According to [Table 3](#), the final diagnosis for stroke is 89.4% patients who were released with recovery, while 10.6% of them showed brain hemorrhage died. This study is similar to the previous results reported by Lose et al who carried out a study entitled, "Long-term mortality rate after stroke in patients with 18-50 years" on 9595 patients who were admitted to American hospitals.<sup>13</sup> They concluded that the minimum survival rate was related to a brain hemorrhage. The survival rate in hemorrhagic ischemia, transient ischemic attack, and ischemic stroke was respectively 91, 262, and 606 people, which indicates the mortality rate caused by hemorrhagic stroke.

The results presented in [Table 4](#) suggest that there was no significant difference between different causes of disease occurrence and the patients' sex. In addition, they also show that 42.6% of the men and 51.9% of the women had referred due to their heavy tongue. These results are in line with the previous study which conducted by Hofman et al who studied 269 stroke patients aging 75-80 years in South Carolina, the USA, and showed that 61% of the patients had referred because of heavy tongue.<sup>14</sup>

According to the results presented in [Table 5](#), it can be seen that the highest rate of current disease was related to hypertension around 53.5% and 96.6% among men and women, respectively, and both groups were significantly different in this regard ( $p < 0.02$ ). These results are similar to the study which conducted by Wang et al who studied 13,236 over-18 male and female stroke patients in Europe, America, Japan, China, and Germany, and concluded that about 75% had hypertension as their current disease ( $p < 0.03$ ).<sup>15</sup>

The results presented in [Table 5](#) also show that the current disease was not the reason for reference in 38.6% of the men and 22.8% of the women, and the two groups were significantly different in this regard. Similar results as the present study were not found.

Finally, [Table 6](#) indicate that the maximum disease history which is related to heart disease around 39.6% and 46.8% in men and women, respectively, although this difference was not significant. These results are in line with the previous study carried out by Albert et al. on a study entitled, "Thickening of the arteries, the risk of coronary heart disease, and stroke" where they concluded that about 59.7% of the patients had heart disease before their reference ( $p < 0.03$ ).<sup>16</sup>

## CONCLUSION

Stroke is the third cause of mortality, the second debilitating factor, and the most important challenge in life that leads to stress and disruption in different aspects of the individuals' lives. So that, it is recommended that patients with stroke be provided with particular therapeutic and rehabilitation programs in which the patients and their demographic characteristics and relevant factors are precisely evaluated.

In the present study, stroke caused by bleeding was known as the worst type of stroke, and those who survived hemorrhagic stroke had a lower probability of survival than other groups. Moreover, it was observed that most of the patients with stroke had hypertension as their current disease, which is a part of a general stress response during the acute phase of stroke.

In addition, the results of the present study showed that most of the individuals had a stroke before heart disease, and some heart diseases were known as the risk factors for stroke. Furthermore, stroke is a risk factor for heart disease. Individuals with angina or those with a history of heart attack have the highest risk of experiencing a stroke during atherosclerosis period compared to those without heart problems. As a result, it is necessary to control the risk factor of heart disease, hypertension, and blood lipid as serious risk factors in heart diseases.

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