



Patient Perception, Preference and Participation

Assessing awareness of appropriate responses to symptoms of stroke



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ABSTRACT

Objective: The study explored (1) the level of awareness, and associates of greater awareness, of the appropriate action to take in response to stroke symptoms; and (2) actions taken in response to potential stroke symptoms, among general practice patients.

Methods: Patients attending general practice clinics in New South Wales, Australia completed a paper and pencil survey.

Results: 308 participants returned the survey. 76% indicated they would call an ambulance within 10 min for 'difficulty speaking or understanding others, with blurred vision (in one eye), and face, arm or leg weakness or numbness (on one side of the body)'. Having a first degree relative with a history of stroke was significantly associated with greater awareness of the appropriate action to take in response to stroke symptoms. Of those reporting they had experienced 'dizziness, loss of balance or an unexplained fall' 80% did not call an ambulance at the time of experiencing this symptom.

Conclusion: There appears to be high awareness of the appropriate response to take for stroke symptoms among this sample, however this does not translate into actions when individuals experience a potential stroke symptom.

Practice implications: Education campaigns should be targeted towards individuals without a family history of stroke.

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1. Introduction

Globally, stroke is the second leading cause of death amongst high, medium and low income countries [1]. Thrombolytic therapy with intravenous tissue plasminogen activator (tPA) is an effective intervention in appropriately selected acute stroke patients [2]. Treatment must be given within 4.5 h of symptom onset, with the effectiveness of treatment increased when given earlier within this time window [3]. Therefore medical care needs to be sought as quickly as possible following symptom onset. Currently, of ischaemic stroke patients, 7% receive tPA in Australia [4], and approximately 2% in the United States (US) [5].

1.1. Delay in seeking help from emergency services

While a number of factors may contribute to the low rate of tPA administration, major barriers include failure of the patient or

family member to seek help urgently [6–9] and lack of stroke knowledge [10,11]. In Australia, 82% of stroke patients present to hospital as an emergency [4]. However, only 41% arrive to hospital within 4.5 h of stroke onset [4]. In the United Kingdom (UK), only 48% of stroke patients present to hospital as an emergency, and 37% present within 3 h of symptom onset [12].

1.2. Awareness of appropriate action for stroke symptoms

Approximately 53–80% of the public report they would call an ambulance for themselves or another in the event of a stroke [13–17]. However these findings do not take into account the situation faced by someone having or witnessing a stroke [18], as the symptoms need to trigger the response rather than the diagnosis [14]. Yoon et al. [14] found that only 1–20% of people would call an ambulance should they experience one stroke symptom. However as stroke patients often experience more than one symptom simultaneously [19], the conclusions to be drawn from this study are limited. Another study, conducted in the US, found participants scored higher in identifying the appropriate response, calling 911 immediately, when presented with multiple stroke symptoms [18]. However, as the study included first year medical

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students, results may not be generalisable to the general population.

1.3. Awareness of appropriate responses to stroke in the general practice setting

Approximately 81–94% of individuals consult a general practitioner at least once a year [20,21]. Additionally, general practice (GP) clinics are accessed by a high proportion of older age individuals and those with pre-existing risk factors [22] and therefore contain a high proportion of people at an increased risk of stroke. Given the increased risk in this population, it is important to assess their level of awareness of the appropriate response to stroke symptoms. This study will provide important insights into the current levels of stroke awareness among general practice patients, and identify the educational needs of these at-risk individuals.

1.4. Aims

Among general practice patients, this study aimed to identify: (1) levels of awareness of the appropriate action to take if a friend or family member experienced stroke symptoms; (2) the socio-demographic factors associated with greater awareness of the appropriate action to take for stroke symptoms; and (3) the action taken by those who report having experienced a potential stroke symptom.

2. Methods

The study was conducted in two GP clinics in Lake Macquarie East, New South Wales, Australia. Practices within this locality were chosen as it contained the highest proportion of persons with a known stroke risk factor (55 years or older), and highest population density (persons/km²) within Newcastle and Lake Macquarie Statistical Sub Division area [23]. The study was approved by the Human Research Ethics Committee of the University of Newcastle.

2.1. Participants

Consecutive patients attending a participating GP clinic on selected days during October–December 2011 were invited to participate. Patients under the age of 18 years, with insufficient English, or otherwise unable to complete the survey (for example too ill or unable to read) were excluded.

2.2. Procedure

Upon arrival at the clinic a research assistant sought informed consent from eligible patients. The purpose of the survey was described as examining people's awareness of the appropriate responses to take for signs and symptoms indicating a common disease or condition, with no mention of stroke. Consenting patients completed a 10–15 min paper and pencil survey prior to their consultation. Age and gender of consenters and non-consenters were recorded.

Participants who did not complete the survey prior to their appointment had the option of completing the survey after their appointment, at the clinic or at home. Participants who chose to take the survey home were provided with a reply paid envelope. Those who did not return the survey were sent a reminder letter 2 weeks following their appointment at the GP clinic.

2.3. Measures

2.3.1. Development of stroke symptom clusters

Participants were presented with four stroke symptom clusters (that is, a group of symptoms) developed on the basis of a literature search and descriptions from National Stroke Foundation (NSF). As patients often experience more than one symptom simultaneously, symptoms were presented as clusters [19,24]. Symptoms within each cluster were based on the four ischaemic stroke subtypes, i.e. lacunar infarct, total anterior circulation infarct, partial anterior circulation infarct, and posterior circulation infarct [25,26]. Symptom clusters were reviewed by a neurologist with expertise in stroke and a nurse with cardiology experience. The survey comprised the following clusters:

1. Face, arm and leg weakness or numbness (on one side of the body).
2. Difficulty speaking or understanding others, with blurred vision (in one eye), and face, arm or leg weakness or numbness (on one side of the body).
3. Difficulty speaking or understanding others, with blurred vision (in one eye) and dizziness.
4. Blurred vision, with face, arm or leg weakness or numbness (on both sides of the body).

2.3.2. Survey items

Hypothetical symptoms: Following each symptom cluster participants were asked "If an adult friend or family member had the following symptoms what would you do?" Response options included "Call an ambulance and describe the symptoms to the officer", "Go to the hospital emergency department", "Call a general practitioner (GP)" and "Wait to see if the symptoms persist, then decide". Participants were asked to indicate the estimated time (in minutes, hours or days) they would wait before taking the action.

Self-reported experience of symptoms: Participants were presented with a list of potential stroke symptoms as described by NSF and asked, "Have you experienced this symptom within the last 12 months?" Symptoms are presented in Table 3. Participants who indicated they had experienced a potential stroke symptom were asked "What did you do when the symptom started?" Response options included "Called an ambulance", "Went to the emergency department", "Called a general practitioner (GP)" and "Did not do anything". Participants were also asked how long they waited (minutes, hours or days) before taking the action. Those who indicated they did not call an ambulance were asked the main reason for not taking this action.

Participant characteristics: Participants were asked to report whether they had any of the following risk factors: history of stroke, previous transient ischaemic attack (TIA), high blood pressure (hypertension), high cholesterol, history of heart attack, irregular pulse (atrial fibrillation), diabetes (type 1 or 2), smoking status, and first degree relative history of stroke. Participants were also asked whether other family and/or friends had a history of stroke, whether they had completed a first aid course, their perceived risk of stroke compared to another person of their age, and the extent to which they agreed/disagreed with the statement "An ambulance should be called immediately if someone has a stroke". Age in years, gender, marital status, highest level of education completed, employment status, and country of birth were obtained. Questions on participant characteristics were completed last, thus minimising the extent that respondents were cued to the survey's focus on stroke.

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