

Related to incidence of stroke health and social care essay



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CHAPTER II REVIEW OF LITERATURE The literature review refers to the activities that involved in identifying and searching for information on a topic and evolving a comprehensive idea of it. It is an essential component of research process. It aids the researcher to understand what is already known in relation to the problem of interest and what remains to be known. Review of literature helps to plan and conduct the study in a systematic and scientific manner. Reviews are discussed in the following headings; Incidence of stroke Prevalence of swallowing difficulties in post stroke patients. Effect of shaker exercise and hyoid lift manoeuvre on dysphagia. Effect of other exercise and conventional therapies on dysphagia.

Studies related to incidence of stroke

Barker-Collo et al., (2009) conducted a systematic review of population based studies of the incidence and early case fatality of stroke based on the studies published from 1970 to 2008. Stroke incidence and case fatality from 21 days to 1 month post stroke were analysed. The review showed a statistically significant trend in stroke incidence with 42% decrease in stroke incidence in high income countries and greater than 10% increase in stroke incidence in low to middle income countries. The overall stroke incidence rate in low to middle income countries were exceeded 20% than the high income countries. Bhat et al., (2008) established a prospective study collect the standardized data on annual incidence and case fatality rate at 28 days during 2005-2006. The result showed an annual incidence in subjects of 25 years and above of 145/100, 000 persons (CI 95%: 120-170); for males it is 149/100, 000 persons (CI 95%: 120-170) and for females it is 141/100, 000 persons (CI 95%: 120-160). Stroke diagnosis was supported by computed

tomography in 407 (89. 2%) of 456 FES cases: 366 (80. 2%) had ischemic stroke, 81 (17. 7%) had hemorrhagic stroke and 9 (1. 9%) were in the unspecified category. The mean age was $66 \pm$ (SD) 13. 60 years, women were older as compared to men (mean age $68. 9 \pm 13. 12$ years vs. $63. 4 \pm 13. 53$ years). Case fatality at 28 days, 320 (70%) of 456 FES cases were still alive and 136 (29. 8%) had died. Of the 320 surviving patients 38. 5% had moderate to severe disability by the modified Rankin scale. US Centers for Disease Control and Prevention, (2002), stroke is the third leading cause of death in the United States. More than 140, 000 people die each year from stroke in the United States. Each year, approximately 795, 000 people suffer a stroke. About 600, 000 of these are first attacks, and 185, 000 are recurrent attacks. Nearly three-quarters of all strokes occur in people over the age of 65. The risk of having a stroke more than doubles each decade after the age of 55. Strokes can and do occur at ANY age. Nearly one fourth of strokes occur in people under the age of 65. Stroke death rates are higher for African-Americans than for whites, even at younger ages. On average, someone in the United States has a stroke every 40 seconds. Stroke accounted for about one of every 17 deaths in the United States in 2006. Stroke mortality in 2005 was 137, 000. Anand et al., (2001) were estimated the mortality and morbidity due to stroke in India. They collected information through electronic search, hand search and contacts with experts. Analysis was done separately for males and females at 10 year intervals. They located 7 studies and 2 were discarded. The prevalence estimated as 203 per 100, 000 populations above 20 years. The male female ratio was 1. 7. 12% of all strokes occurred in population below 40 years. The estimated 102, 000 deaths, which represented 1. 2% of total deaths in the country. The <https://assignbuster.com/related-to-incidence-of-stroke-health-and-social-care-essay/>

World Heart Federation states that every year 15 million people suffer with stroke globally. In that nearly 6 million die and another 5 million are left disabled. Stroke is considered as the second cause of disability after dementia. Globally, stroke is the second leading cause of death above 60 years and fifth leading cause of death in people aged 15 to 59 years old. The incidence is still increasing in developing countries such as China, where 1.3 million people have stroke each year and 75% live with varying degrees of disability due to stroke. Banerjee and Das (N. D.) reviewed various population based surveys on stroke which were conducted in different parts of India. During the last decade, the age-adjusted prevalence rate of stroke was between 250-350/100,000. Recent studies showed that the age-adjusted annual incidence rate was 105/100,000 in the urban community of Kolkata and 262/100,000 in a rural community of Bengal. The ratio of cerebral infarct to hemorrhage was 2.21. Hypertension was the most important risk factor. Stroke represented 1.2% of total deaths in India.

Studies related to the prevalence of swallowing difficulties in post stroke patients

Falsetti et al., (2009) analysed patients with stroke in neuro rehabilitation unit to define the incidence of dysphagia, compare clinical bedside assessment and videofluoroscopy and define any correlation between dysphagia and clinical characteristic of patients. The study done in 151 consecutive inpatients with recent ischemic or hemorrhagic stroke. In that 62 were clinically diagnosed with dysphagia and correlation between clinical and VFS diagnosis of dysphagia was significant. They concluded that dysphagia occur in more than a third of the patients with stroke admitted to

rehabilitation and the grade of the dysphagia correlates with dysarthria, aphasia, low FIM and level of cognitive functioning. They found that the large cortical strokes of non dominant side were associated with dysphagia.

Dziewas et al., (2008) stated that aspiration was a common complication associated with stroke patients and also give poor outcome. They assessed the 2 step swallowing provocation test (SPT) to detect the aspiration risk in acute stroke patients. It was concluded that SPT failed to detect the aspiration risk in patients with predominant impairment of oral phase swallowing and relatively intact pharyngeal phase. In later group they concluded that the FEES or additional clinical features indicating oral phase pathology should considered to accurately judging the patient's aspiration risk. Smeeton et al., (2006) elicited a population based long term follow up study to determine whether dysphagia in the first week of acute stroke associated with long term outcome. They assessed 567 patients with dysphagia within one week of stroke and they were followed up at 3 months and yearly for 5 years by face to face interview. The study confirmed the presence of dysphagia during the acute phase of stroke was associated with poor outcome during the subsequent year, especially at 3 months, and was also associated with increased institutionalisation rate in the long term.

Martino et al., (2005) stated that there was a high incidence of dysphagia and associated pulmonary compromise in stroke patients. Out of 104 original peer reviewed articles, 24 articles met inclusion criteria and were evaluated. They found that dysphagia tends to be lower after hemispheric stroke and remains prominent in the rehabilitation brain stem stroke. They also stated that there was increased risk for pneumonia in patients with dysphagia (RR, 3.17; 95% CI, 2.07, 4.87) and even greater risk in patients with aspiration
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(RR, 11.56; 95% CI, 3.36, 39.77). They concluded that the high incidence for dysphagia and pneumonia is a consistent finding with stroke patients. Bowen et al., (2004) conducted a study to assess the patient awareness of the clinical indicators of the dysphagia and its influence on swallowing performance and outcome in dysphagic stroke patients. 70 patients were assessed 72 hours after the hemispheric stroke. 27 patients identified with dysphagia, out of which 16 had poor awareness of their dysphagic symptoms. Dysphagic patients with poor awareness drank water more quickly (5ml/s vs. <1ml/s, $p=0.03$) and took larger volumes of food per swallow (10ml vs. 6ml, $p=0.04$) than patients with good awareness. Dysphagic patients with good awareness modified their way of drink and swallow more slowly than those with poor awareness. These findings concluded that the patients with poor awareness experienced more complications at 3 months than those with good awareness. Guey et al., (2000) conducted a study to delineate the incidence and outcome of dysphagia among hospitalized patients. They retrospectively reviewed the medical records of 36 patients who were admitted of brain stem stroke. Follow up interviews were conducted via telephone to learn the general medical condition and feeding status of the patients 7 to 43 months after hospital discharge. A total of 81% of the patients had dysphagia at the time of initial clinical swallowing evaluation, which was performed 10 to 75 days after onset of stroke. A total of 79% of the dysphagic individuals depended on tube feeding at the initial evaluation. Follow up interviews showed that 88% of the 27 patients who were contacted had resumed full oral intake 4 months

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after the onset of stroke. They concluded that the incidence of dysphagia was relatively high in their study population and the long term outcome was favourable. Cameron et al., (2000) prospectively examined 128 patients with acute first-ever stroke to determine the prevalence of swallowing disorders, the diagnostic accuracy of the clinical assessment of swallowing function compared with video fluoroscopy, and interobserver agreement for the clinical and video fluoroscopic diagnosis of swallowing disorders and aspiration. They found that clinical and video fluoroscopic evidence of a swallowing disorder in 51% and 64% of patients respectively. Hallberg et al., (1999) conducted a study to investigate the frequency of dysphagia among patients with acute stroke. Using the medical records and continuous observation they detected 77% of the patients with dysphagia during the screening process. It was concluded that most of the dysphagic patients can be identified through the systematic interviews, observations and test swallows and the severity of stroke was an indicator of dysphagia. The study suggested that this test should repeat and include in the nursing care assessment to find out the dysphagic patients and to reduce functional disability. Smithard et al., (1997) assessed the frequency and natural history of swallowing problems following an acute stroke. 121 consecutive patients admitted within 24 hours of the onset of their stroke were studied prospectively. They assessed the ability to swallow repeatedly by a physician, a speech and language therapist, and by video fluoroscopy. Clinically 51% (61/121) of patients were assessed as being at risk of aspiration on admission. Many swallowing problems resolved over the first 7 days, through 28/110 (27%) were still considered at risk by the physician. Over a 6-month period, most problems had resolved, but some patients had

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persistent difficulties (6, 8%), and a few (2, 3% at 6 months) had developed swallowing problems. Ninety-five patients underwent video fluoroscopic examination within a median time of 2 days; 21 (22%) were aspirating. At 1 month a repeat examination showed that 12 (15%) were aspirating. Only 4 of these were persistent; the remaining 8 had not been previously identified. This study has confirmed that swallowing problems following acute stroke are common, and it has been documented that the dysphagia may persist, recur in some patients, or develop in others later in the history of their stroke. Hamdy (1997) compared the electromyographic responses of the affected and unaffected hemispheres in dysphagic and non-dysphagic patients with unilateral hemiplegic stroke. They took 20 patients with unilateral hemispheric stroke in which 8 of them had associated swallowing difficulties. They found that the stimulation of the unaffected hemisphere evoked smaller pharyngeal responses in dysphagic patients than in non-dysphagic patients. They concluded that the dysphagia after unilateral hemispheric stroke was related to the magnitude of pharyngeal motor representation in the unaffected hemisphere. Veis and logemann (1985) conducted a study to determine the nature of the swallowing disorders, the relationship between the site of the cerebrovascular accident and the nature of the swallowing disorder(s) exhibited and the frequency and etiology of any aspiration present. The 38 CVA patients exhibited a variety of physiologic disturbances in swallowing, usually occurring in combination rather than as isolated disorders. Few differences in nature of swallowing disorders were seen according to lesion location. Approximately one third of the patients aspirated, most frequently because of delayed triggering of the swallowing reflex. All aspiration occurred because of disorders in the pharyngeal stage

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of the swallow, emphasizing the importance of VFG evaluation of dysphagia in CVA patients.

Studies related to the effect of shaker exercise and Hyoid lift manoeuvre on dysphagia

Antunes & Lunet (2012) had done a structured interventional programme to find out the effect of head tilt exercise (shaker) on the swallow function.

They concluded that there is an increase in the anterior excursion of the larynx and in the anteroposterior diameter of the upper esophageal sphincter opening and thereby eliminating the dysphagic symptoms. Shaker

et al., (2009) conducted a randomized study on 19 patients who exhibited oropharyngeal dysphagia on videofluorography involving upper esophageal sphincter (UES) and had 3 months history of aspiration. Out of which 14

patients were subjected to either traditional swallowing therapy or shaker exercise for 6 weeks, and undergone modified barium swallow on pre and post therapy. The study concluded that the residue in various oral and

pharyngeal locations did not differ between the groups and both had significant effect on the post therapy. But the shaker exercise group elicited significantly less aspiration in post therapy. Antonik et al., (2009)

prospectively examined the 11 dysphagic patients with upper esophageal sphincter dysfunction to determine the effect of shaker exercise on

thyrohyoid muscle shortening. 6 patients were randomized to traditional swallowing therapy and 5 to the shaker exercise group. It showed that the percent change in the thyrohyoid distance in the shaker exercise group was significantly high when compared to the traditional therapy ($p= 0.034$). The

completion of the therapy stated that the shaker exercise augments the

thyrohyoid muscle shortening in addition to the strengthening of the suprahyoid muscles. Daniels et al., (2002) evaluated 27 patients about the effect of shaker exercise on post stroke dysphagia manifested by post swallow residue and aspiration necessitating percutaneous tube feeding. They assessed by videofluoroscopy and functional assessment of swallowing score before and after 6 weeks of shaker exercise program. The results were exhibited significant improvement in the UES opening, anterior laryngeal excursion ($p < 0.01$) and also in the resolution of the post deglutitive aspiration. They concluded that the suprahyoid muscle strengthening exercise program is effective in restoring oral feeding in dysphagic patients. Easterling et al., (2002) described the effect of shaker exercise on swallowing function of the older people. 26 older adults performed the shaker exercise. It showed that maximum anterior hyoid and laryngeal excursions as well as maximum anteroposterior UES opening increased ($p < 0.05$) following exercise. Duration to attain the exercise was varied among the participants.

Studies related to the effect of other exercise and conventional therapies on dysphagia.

Crary et al., (2012) implemented a prospective study to determine the effect of Mendelsohn maneuver in the swallowing physiology of the post stroke patients. 18 outpatients between 6 weeks and 22 months post stroke were enrolled. Cross over design used to compare 2 weeks of treatment with 2 weeks of no treatment. There was improvement observed in the duration of opening of the upper esophageal sphincter (UES). The result concluded that the Mendelsohn maneuver altering the duration of hyoid movement and UES

opening. Jung et al., (2012) explained the effect of bedside exercise program on the recovery of swallowing after stroke. They conducted an experimental study on 50 stroke patients with dysphagia (<6 months post stroke), 25 subjects each in control and experimental group respectively. The experimental group received treatment with bedside exercise training including oral, pharyngeal, laryngeal and respiratory exercises 1 hour per day for 2 months. The result showed improvement of swallowing function at the oral phase in video fluoroscopy in experimental group than that of control group ($p < 0.05$). Baijens et al., (2009) conducted a systematic review of the literature on the effect of therapy in oropharyngeal dysphagia carried out by the speech therapists. The literature search was performed using the electronic databases, pubmed and Embase. 59 studies were included. Statistically significant positive therapy effects were found. Even though many questions remain about the effects of therapy in oropharyngeal dysphagia some positive significant outcome studies have been published. Steele et al., (2008) conducted a case study with 3 subjects on the tongue pressure training therapy for the post stroke dysphagic patients. The outcome was measured as increased isometric tongue strength, improved tongue pressure generation accuracy, improved bolus control on video fluoroscopy and improved functional dietary intake by mouth. The study suggested that tongue pressure training was beneficial for improving instrumental and functional aspects of swallowing. Khedr et al., (2008) explained the effectiveness of repetitive Transcranial magnetic stimulation (rTMS) on post stroke dysphagia. 26 patients with monohemispheric stroke received real ($n = 14$) or sham ($n = 12$) rTMS, a total of 300 rTMS pulses on the affected motor cortex for five consecutive days. Real rTMS led to a

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significantly greater improvement compared with sham in dysphagia. The study concluded that rTMS was useful adjunct to conventional therapy for dysphagia after stroke. Runions et al., (2002) implemented a study to find the effectiveness of decision making algorithms to enhance the assessment and dietary treatment of swallowing difficulties in acute stroke patients in the neuroscience unit. More than 70% of the patients showed clinical improvement in the swallowing function during their hospitalization. The result showed that the early and ongoing assessment of the swallowing functions and dietary modifications of the patients have a good effect on the swallowing ability of the patients. Philip et al., (2000) done a study to assess the effect of different management strategies for dysphagic stroke patients particularly regard to the feeding. They assessed the nutritional status of the patients after the nutritional supplement with percutaneous endoscopic gastrostomy versus nasogastric tube feeding. Two trials in 49 patients suggested that PEG reduces end-of-trial case fatality (Peto odds ratio 0. 28, 95% CI 0. 09 to 0. 89) and treatment failures (OR 0. 10, 95% CI 0. 02 to 0. 52) and improved nutritional status, assessed as weight, mid arm circumference or serum albumin. The researchers concluded that PEG feeding may improve the outcome and nutrition as compared with NGT feeding.