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Knowledge, Awareness, Prevalence and Frequency of Daily Physical Activity and its Association with Stroke in Young Adult Population

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ABSTRACT

Stroke is a medical condition affecting the brain. It occurs when the blood supply to the brain or part of the brain is stopped or reduced, preventing the brain cells from getting oxygen. As the neurons are the most sensitive cells in the body, they tend to die after cessation of oxygen supply for a very few minutes. Several remedial measures are available for this medical emergency at the time of stroke and even after that. It is believed that the stroke recurs after time and thus preparatory and cautionary steps to be carried out for survival. Among that daily physical activity seems to have a greater positive approach towards stroke survivors. In general, physical activity is an essential part of human life which many people neglect. But it has an underlying significance for human life and healthy well-being. It maintains the body's health condition free of certain diseases too. Thus, this study attempts to analyze the awareness and to knowledge the people about the association between stroke and daily physical activity.

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INTRODUCTION

Fitness doesn't just allude to being genuinely fit, yet additionally alludes to an individual's psychological state also. On the off chance that an individual is genuinely fit, yet intellectually unwell or grieved, the individual in question won't have the option to work ideally. Mental wellness is accomplished if your body is working admirably. You can help loosen up your mind and wipe out worries by practising consistently and eating right. People who are genuinely fit are additionally more advantageous, can keep up their most ideal weight, and are likewise not inclined to heart and other medical issues. To keep up a casual perspective, an individual should be genuinely dynamic. An individual who is fit both genuinely and intellectually is sufficiently able to confront the good and bad times of life and isn't influenced by extreme changes on the off chance that they take place.

Stroke is sudden damage to the brain caused by the interruption of the blood supply to the brain (Johnson *et al.*, 2014). Around many of those who survive strokes are permanently disabled (Kim and Jee, 2017). Exercise is planned to improve physical fitness (Balchin and Valkenborghs, 2016). Physical fitness is impaired after a stroke. Cardiorespiratory fitness is approximately 50% of that in healthy people of the same age and sex (Wilkinson *et al.*, 2019). Similarly, muscle strength (Long *et al.*, 2010) and muscle power (Archer, 2011) show substantial and variable impairment. Physical Inactivity is the risk factor for first-ever stroke (Eun-Cheol and Chang-Ok, 2010). The UK reports 130000 strokes

per year (Valentine *et al.*, 2010). Physical Inactivity accounts for 80% of global burdens (Phillips and Young, 2010; Brehm and Davis, 2014) is the stroke. An exercise is a physical tool which is very useful these days to prevent many diseases.

The American heart and brain association made a statement that stroke survivors were good at a physical activity (Jin, 2008). Duration of exercise, the effect of gender, and intensity of exercise are some of the fields where researchers fail to come to an accurate solution. Physical activity has 25 to 30% Risk relation for stroke (Ward, 2010). The relation between physical activities and diseases are any today issues. The effect of them on stroke prevention is very interesting. There is a wide range of past stroke problems including movement and junction, nobility; balance cognition, attention, memory, pain, sensation, perception, emotional: problems and psychological issues. The practice of physical activity can get rid of all those problems by 25-30% (Archer, 2011). Many people survived strokes due to good physical activity. The aim is to create awareness and to educate the young adult population on the relationship between stroke and daily physical activity.

Previously our team had conducted numerous survey studies (Thejeswar and Thenmozhi, 2015; Sriram *et al.*, 2015), in vivo laboratory animal studies (Seppan *et al.*, 2018; Nandhini *et al.*, 2018), in silico and genetic studies (Johnson *et al.*, 2020; Sekar *et al.*, 2019), morphological studies (Krishna and Babu, 2016; Subashri and Thenmozhi, 2016), anthropological comparison studies (Keerthana and Thenmozhi, 2016; Pratha and Thenmozhi, 2016) and somatometric studies (Choudhari and Thenmozhi, 2016; Kannan and Thenmozhi, 2016) over the past five years. Now we are focusing on epidemiological surveys—the idea for this survey sprouted from the current interest in our community and its well-being.

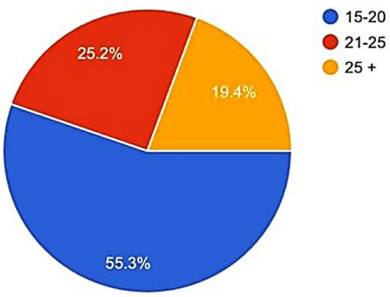

Figure 1: Shows percentage distribution of age of the survey participants

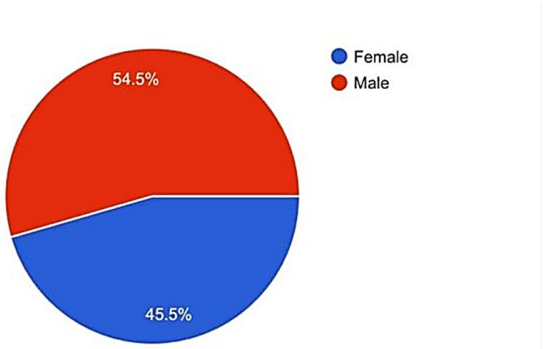

Figure 2: Shows percentage distribution of gender of the survey participants

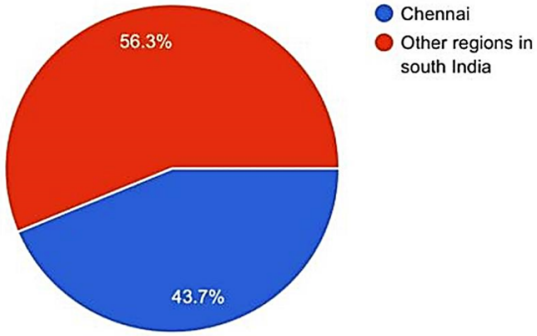

Figure 3: Shows percentage distribution of the location of the survey participants

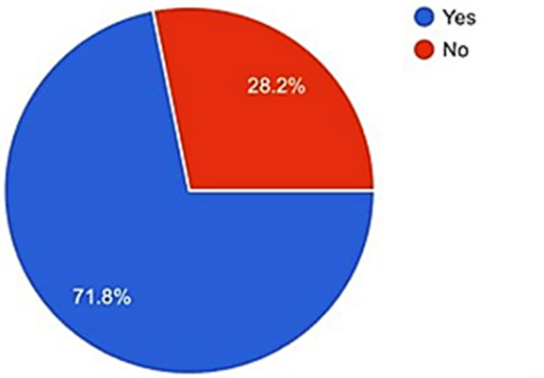

Figure 4: Shows percentage distribution of response of the survey participants on the relationship between stroke and physical activity

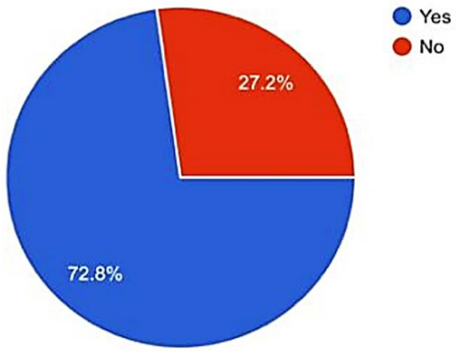

Figure 5: Shows percentage distribution of response of the participants on the chance of getting a stroke upon doing physical activity

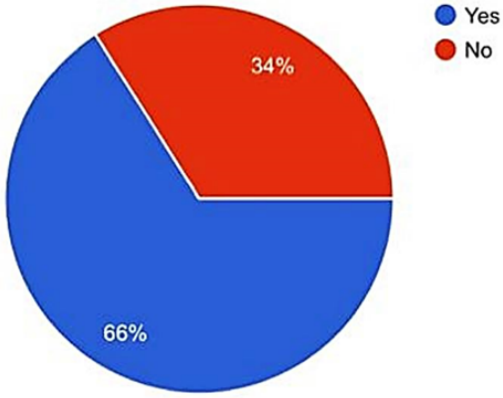

Figure 8: Shows percentage distribution of response of the participants on the probability of getting a stroke

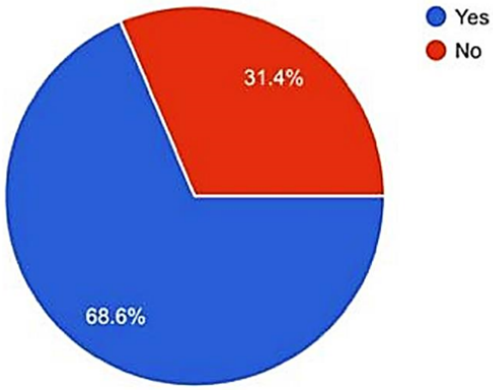

Figure 6: Shows percentage distribution of response of the participants on BMR

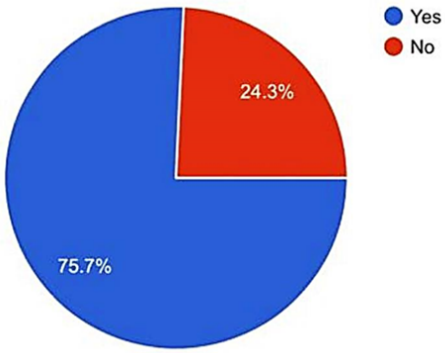

Figure 9: Shows percentage distribution of response of the participants on doctors prescription on physical activity

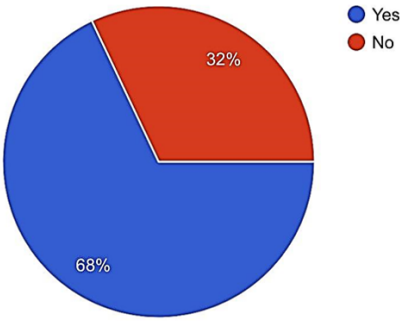

Figure 7: Shows percentage distribution of responses on physical activity improving health

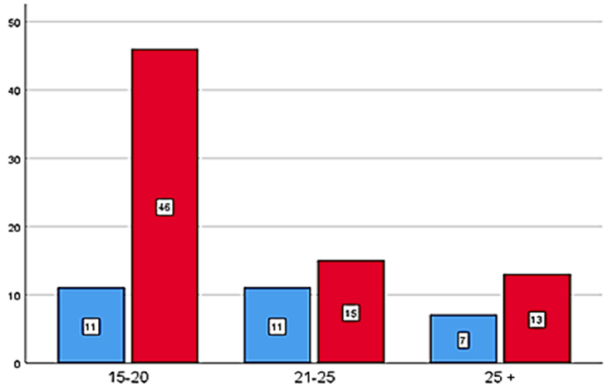

Figure 10: The bar graph showing a chi-square analysis of the association between different age groups of students on the relation between physical activity and stroke or not

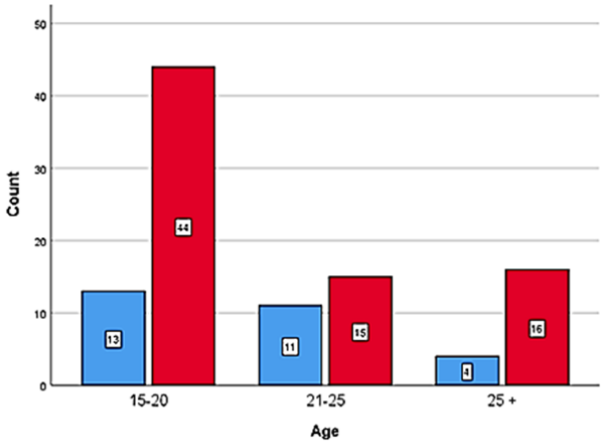

Figure 11: The bar graph showing chi-square analysis of the association between different age groups of students with responses to high physical activity have less chance to be attacked by a stroke or not

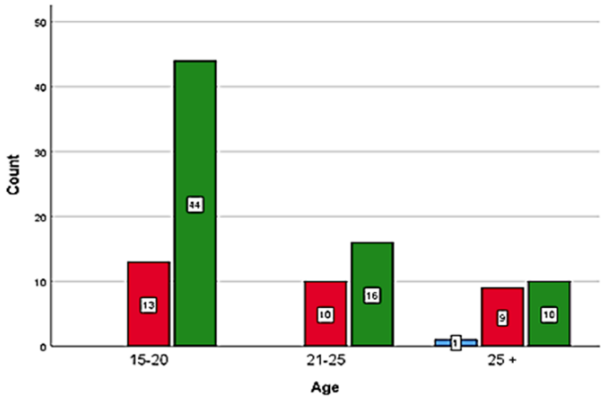

Figure 12: The bar graph showing a chi-square analysis of the association between different age groups of students on physical activity and basal metabolic rate and activeness

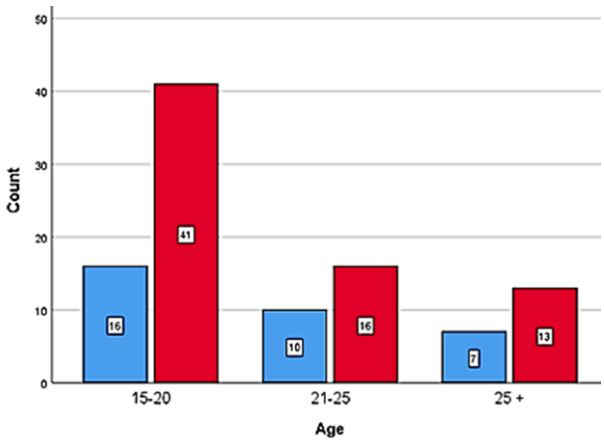

Figure 13: The bar graph showing chi-square analysis of the association between different age groups of students with their perception of physical activity improving health

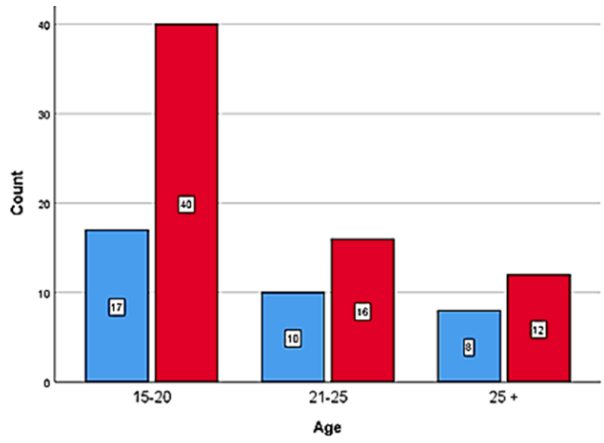

Figure 14: The bar graph showing chi-square analysis of the association between different age groups of students on doing physical activity, reducing the chances of stroke by 25 to 30%

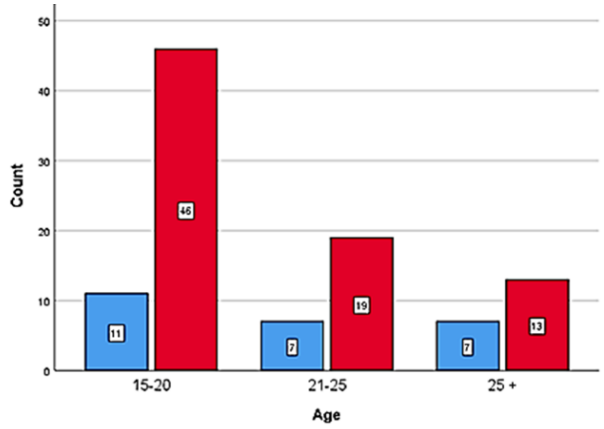

Figure 15: The bar graph showing chi-square analysis of the association between different age groups of students with a response of the participants on the probability of getting a stroke

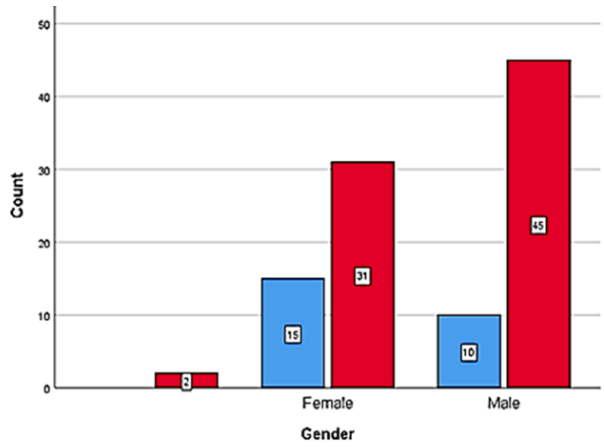

Figure 16: The bar graph showing a chi-square analysis of the association between different age groups of students on doctors' perspective on the importance of physical exercise

MATERIALS AND METHODS

The study was an online survey setting conducted among the young adult population of both the genders. The survey was approved by the Institutional Review Board. 103 participants were involved in the study. A self-structured standard questionnaire containing 10 questions including demographic data was circulated using Google Forms Software through online setting. The responses were collected and sorted in an MS Excel document. The data were imported in SPSS Software, version 23.0. The statistical analysis used was descriptive statistics with frequency distribution. For finding any association between the variables Chi square test was done. All the data were represented graphically by pie charts and bar charts. It was seen to keep away all the possible mistakes, internal and external validity were implemented as standard validation criteria. Simple random survey method was used for the survey. Education level, gender, was considered as independent variables. Ages, health status, obesity, familial history of stroke were considered as dependent variables.

RESULTS AND DISCUSSION

In the present study, out of 103 responses, 55.3% are aged from 15-20, 25.5% are aged from 21-25, and 19.4% are above 25 years of age (Figure 1). Out of 103 responses, 55.3% are aged between 15- 20, 25.5% are aged 21-25, 19.4 % are above 25 years.

Out of 103 participants, 57.5% are male, 42.5% are females (Figure 2). Out of 103 responses, 57.5% are male, 45.5% are female. The locations of the participants depict that out of 103, 43.7% are from Chennai, 56.3% are from other parts of South India (Figure 3). Out of 103 participants, 43.7% are from Chennai, 56.3% are from other parts of SouthIndia.

From the data, it was found that 71.8% of the people agree that there is a relation between stroke and physical activity, while 27.2% do not think so (Figure 4).

This observation was under earlier studies (Tsoucalas *et al.*, 2019; Menon and Thenmozhi, 2016). 72.8% of them think that people with higher physical activity have less chance to be attacked by a stroke, whilst 27.2 % do not think so (Figure 5). Out of 103 respondents, 72.8% of them think that people with higher physical activity have less chance to be attacked, whilst 27.2% said no to it.

This was similar to the findings of (Thilarajah *et al.*, 2016; Samuel and Thenmozhi, 2015).

From the survey study, it was observed that 68.6% accept that physical activity enhances the body's metabolic rate and keeps the body active whereas the remaining 31.4 % doesn't think so (Figure 6). Out of 103 represented 68.8% accept that physical activity enhances the body's metabolic rate and keeps the body active, whereas the remaining 31.4 % doesn't accept this point.

This observation was similar to the previous studies reported by (Watson, 2016; Hafeez and Thenmozhi, 2016). Out of 103 respondents, 68% of them agree that doing physical activity improves overall health, whereas 30% of them were against that (Figure 7). Out of 103 people, 68.6% of them agree that doing physical activity improves overall health, whereas 31.4% of them deny this concept. This was slightly variable to the earlier observations of (Reinholdsson *et al.*, 2018; Kim and Jee, 2017). 66 % of them are aware of the fact that doing physical activity can reduce the chance of stroke by 25-30%, whereas 34% of respondents have no idea (Figure 8).

75.7 % agree with the fact that 90% of doctors suggest physical exercise, whereas 24.03% deny the fact (Figure 9).

This data was following the previous research studies done by (Tajiri *et al.*, 2019; Fedewa *et al.*, 2017).

The chi-square analysis done for different age groups of students on the relation between physical activity and stroke depicted no association in the present study. Chi-square test showed p=0.073, (p>0.05) indicating statistically not significant (Figure 10).

The association between different age groups of students with responses on whether physical activity has less chance to be attacked by a stroke depicted no association in the present survey study. Chi-square test showed p=0.130, (p>0.05) indicating statistically not significant (Figure 11).

The association between different age groups of students on physical activity and basal metabolic rate and activeness was done, and it was found that there was no association. Chi-square test showed p=0.063, (p>0.05) indicating statistically not significant (Figure 12).

The association between different age groups of students with their perception of physical activity improving health was compared and found that there was no significant association between them. Chi-square test showed p=0.611, (p>0.05) indicating statistically not significant (Figure 13).

The association between different age groups of students with responses to doing physical activity reduces the chances of stroke by 25 to 30% was done and found that there was no significant

association between them. Chi-square test showed p=0.408, (p<0.05) indicating statistically not significant (Figure 14).

The association between different age groups of students with the response of the participants on the probability of getting a stroke was done and found that there was no significant association between them. Chi-square test showed p=0.611, (p>0.05) indicating statistically not significant (Figure 15).

The association between different age groups of students with responses to the doctors' perspective on the importance of physical exercise was compared and found that there was no significant association between them. Chi-square test showed p=0.347, (p>0.05) indicating statistically not significant (Figure 16).

Lifestyle changes have negatively impacted our health since we are too involved to change the way of life at this point. To know the cause of a stroke can help tackle them to some extent.

Limitation of the study: Limitations of this survey are that they are done with limited Sampling Size and on homogenous population.

CONCLUSION

Physical exercise plays a significant role in reducing the risk of stroke. From the present survey study, people are aware of the importance of daily physical activity in reducing the risks towards stroke. Also, the majority of the population are aware that physical exercise improves health and sedentary lifestyle leads to several health issues. Thus the study created awareness and knowledge for the people on the benefits of daily physical activity on stroke.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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