

## Introduction

Recent reports have shown that even though the incidence rate of stroke has been declining globally, the health burden of stroke, in terms of disabilities, has been on the rise (Feigin et al., 2017). One hypothesis behind this increase in the health burden has been postulated to be the lack of awareness regarding stroke and its modifiable risk factors among the general population (Sundseth et al., 2014).

As the risk factors associated with stroke are modifiable (high blood pressure, smoking and hypercholesterolemia), primary preventative measures aiming to improve the awareness regarding stroke and its risk factors could potentially aid in reducing the health burden.

## Objectives

The advancement and affordability of the mobile phones provides one avenue through which primary interventions targetting stroke awareness can be ensued. Therefore, the prominent aim of the current study was to explore the potential avenue of smartphone-based applications, such as Stroke Riskometer in improving the stroke awareness of the sample population.

Additionally, the study also aimed to gain an in-depth insight into the participant's interaction with the Stroke Riskometer to evaluate which aspects of the application might have assisted in improving awareness.

## Materials & Methods

A mixed-methods approach was implemented to address the aims of the research. A repeated-measures experimental design was utilised to obtain the participants ( $n=23$ ) stroke awareness at two separate instances (once at baseline and once two weeks following an interaction with the Stroke Riskometer). The outcome measure of stroke awareness was evaluated by using two questionnaires adapted from the literature to benefit the aims of the study. Subsequently, focus groups ( $n = 7$ ) were utilised to compliment the quantitative findings. Two focus groups with specific age requirement (one with participants over the age of 40 years old and one with participants below the age of 40 years old) were conducted to gain an in-depth insight into the participant's interaction with the Stroke Riskometer.

## Results & Discussion

Thirty participants ( 23 for the quantitative analysis and 7 for qualitative analysis) were involved in the final analysis. A repeated measures ANOVA displayed a significant difference in the stroke awareness of the sample following an interaction with the Stroke Riskometer,  $F(1,23) = 27.60, p < 0.05$  (as displayed in Table 1).

**Table 1**

*Results of Repeated Measures ANOVA*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Stroke Awareness	55.44	1	55.44	27.60	.000*
Error (Stroke Awareness)	44.19	22	2.008		

\*p value significant at .01 level

Moreover, the focus groups were used as an avenue to gain an insight into the participants subjective experience with the Stroke Riskometer. The narratives from the participants indicated that an interaction with the Stroke Riskometer was perceived as 'knowledge enabling' and 'eye-opening'. The participants expressed that the interaction with the Stroke Riskometer exposed them to brand new information regarding the modifiable risk factors of stroke. Additionally, the personalization aspect of the information was also appreciated by the participants as being helpful and empowering.

## Conclusions

1. Even though the sample size was a limitation, the current study provided preliminary evidence regarding the potential of smartphone-based applications such as Stroke Riskometer in improving stroke awareness.
2. The dissemination of personalized information regarding the modifiable risk factors of stroke was perceived as empowering and helpful by the participants.
3. Future research, could aim to evaluate the long-term impact of an interaction with Stroke Riskometer on stroke awareness.

## References

- Feigin, V. L., Norrving, B., & Mensah, G. A. (2017). Global burden of stroke. *Circulation research*, *120*(3), 439-448.
- Sundseth, A., Faiz, K. W., Rønning, O. M., & Thommessen, B. (2014). Factors related to knowledge of stroke symptoms and risk factors in a Norwegian stroke population. *Journal of Stroke and Cerebrovascular Diseases*, *23*(7), 1849-1855.