A path analytic model of health beliefs on the behavioural adoption of breast self-examination

Breast cancer is the most common cancer and accounted for 34.1% of all cancer among females in Malaysia. Amongst the South-Eastern Asian countries, Malaysia has indicated the highest mortality rate of breast cancer which accounts for 18 per 100,000 populations. In order to increase the rate of early detection of breast cancer while reducing the mortality rate, breast self-examination (BSE) should be encouraged in women. Nevertheless, the uptake of BSE amongst Malaysian women was reported to be relatively low. As such, Malaysian women should be empowered to perform BSE through more effective education and training programs. Works of the literature suggested that health behaviour theories using theoretical constructs and pathways can be used to initiate behavioural changes.

The health belief model (HBM) is the most widely used model or theory which conceptualizes potential barriers or factors that influence a desired health behavioural adoption. In order to conceptualize HBM constructs comprehensively, this study analysed the direct and indirect causal pathways that influence the behavioural adoption of BSE. Further, the moderating effects of socio-demographic factors and knowledge and also the mediating effects of self-efficacy were included to predict the variance in the adoptive behaviour of BSE using structural equation modelling fit statistics. A multi-stage stratified random sampling method was utilized to select the polyclinics in Kuantan, Pahang. The target population for the study sample was women aged between 35 to 70 years able to read and write in Bahasa Malaysia or English and living in Kuantan. By employing a simple proportion formula at 5% type 1 error, $p < 0.05$ and absolute error at 2%, a sample size of 520-subjects was obtained.

Once ethical approval was obtained, a set of copyrighted, validated bilingual self-constructed questionnaire was used to obtain the data. Structural equation modelling (SEM) was used to validate the relationships between health belief constructs and behavioural adoption of BSE while controlling for moderating effects of socio-demographic factors and knowledge as well as the mediating effects of self-efficacy. The Mplus software program using maximum likelihood with robust standard errors (MLR) estimator was employed to perform the SEM. Perceived severity, benefits and barriers were found to significantly influence the behavioural adoption of BSE. Married women aged from 45 to 55 years and knowledge were found to significantly moderate the relationship between perceived benefits and behavioural adoption of BSE. Further, self-efficacy was found as the core construct that mediates the relationship between married women aged 45 to 55 years and the behavioural adoption of BSE.

The overall model was found to explain only 17% of the variance in behavioural adoption for BSE and 21% in self-efficacy. Self-efficacy is found in the study to influence the behavioural adoption of BSE. This is undeniable as self-efficacy can promote confidence in initiating and maintenance of behavioural change if the perceived change is beneficial at an acceptable cost. In conclusion, the model can be used as an interventional tool in designing educational programs to encourage women in Kuantan, Pahang to adopt BSE for early detection. Additionally, the copyrighted, validated questionnaire can be used throughout the world for early breast cancer detection studies and the development of similar models to reduce breast cancer mortality.