

A path analytic model of health beliefs on the behavioural adoption of mammography screening

Breast cancer has become a major concern in health due to its increasing incidence among women worldwide. If detected at an early stage, it can be cured and thus there is an urgent need for early detection. Despite the effectiveness of mammography screening in early detection, its' utilization among Malaysian women remains low, accounting for about 3.6% to 30.9%. This is possibly due to mammography screening being still opportunistic in nature. Review articles indicated that summarized barriers such as attitude and knowledge significantly contributed to the low uptake in breast cancer screening. As such, conceptualizing screening behaviour intentions utilizing Health Belief Model (HBM) is appropriate in understanding behavioural changes.

Since most studies on breast cancer screening adoption have utilized psychological constructs to improvise strategies or improve screening rates by developing models, the HBM constructs were utilized in this study to predict the variance in adoptive behaviour of mammography. At the same time, the moderating effects of knowledge and socio-demographic factors and mediating effects of self-efficacy were analysed using structural modelling fit analysis. A multi-stage stratified random sampling method was utilized to select the polyclinics in Kuantan, Pahang. Five hundred and twenty Malaysian women aged between 35 and 70 years were selected randomly using sample size calculation at 5% type 1 error, $p < 0.05$ and absolute error at 2%. After ethical approvals were obtained, sets of the copyrighted, validated questionnaire were used to obtain the data.

Structural equation modelling (SEM) using Mplus was performed to test the model by analysing the relationship of knowledge, socio-demographic factors and women's beliefs towards the behavioural adoption of mammography. Indirect effects were included iteratively to the path model for evaluating moderating and mediating effects significance. All health beliefs were found to significantly influence the behavioural adoption of mammography screening. Socio-demographic factor (married women) were found to moderate significantly the relationship between perceived susceptibility and behavioural adoption of mammography screening. Further, knowledge and 'married women' were found to significantly affect self-efficacy. Additionally, perceived severity, motivator factors and perceived benefits were found to significantly influence self-efficacy and that self-efficacy influence the behavioural adoption of mammography screening.

The overall model was found to explain 10% of the variance in the behavioural adoption of mammography screening and 23% of the variance in self-efficacy. In conclusion, the model reflected that for the women in Kuantan, Pahang to adopt mammography screening, knowledge and marital status (married women) influence their self-efficacy and that self-efficacy is enhanced via perceived severity, motivator factors and perceived benefits. However, all individual health beliefs significantly affect the behavioural adoption of mammography screening. Finally, the model can be used as an interventional tool in designing mammography promotional and educational programs to encourage women in Kuantan, Pahang to adopt mammography screening for early breast cancer 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.