Multimedia-Based Genetic Counselling in Breast Cancer Patients – A Promising Approach to Enhance the Uptake of Genetic Testing

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Abstract:

Background: Genetic counselling empowers people to make informed choices about genetic testing, which in turn benefits disease management and family planning. However, the traditional face-to-face delivery model is resource-intensive and not always scalable. This pilot study investigates the feasibility of a novel multimedia method for pre-testing genetic counselling and the improvement of patients' uptake rate by this method.

Methods: This study was a prospective and randomized controlled trial. In this pilot study, 40 breast cancer patients were recruited and divided randomly into two groups. Control groups (n=20) received traditional face-to-face genetic counselling, while intervention groups (n=20) received multimedia-based genetic counselling. A mobile application featuring educational videos, discussion forum and a chat room was developed as the intervention. We examined the feasibility and measured the genetic

testing uptake rates as the primary outcome. Secondary outcomes of this study included the risk of cancer perception, patient satisfaction on genetic counselling, genetic knowledge recall accuracy and quality of life measured at 3 days (short-term) and 6 months (long-term) after the counselling.

Results: The attrition rate of this study was low (7.5%) as 37 out of 40 participants completed the study. For the primary outcome, the uptake rate of genetic testing after counselling in the intervention and control groups were 95% and 55%, respectively, with a rate difference of 40% (95% CI: 9.5% to 63.4%), p=0.009. Apparently, more patients opted for genetic testing after receiving the intervention. For other outcomes such as satisfaction on genetic counselling, genetic knowledge and QoL, similar effects were observed in both the control and intervention groups.

Conclusion: The multimedia method of pre-testing genetic counselling for breast cancer patients demonstrated feasibility and improved genetic testing uptake rate. Similar satisfaction between the control and intervention groups implied that the multimedia method is potentially an alternative to the traditional resource-consuming method. In the future, study with a larger scale is encouraged to explore the effectiveness of multimedia genetic counselling services.