Impact of cognitive symptoms on work productivity among Breast Cancer survivors in Hong Kong

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Introduction
Breast cancer is the most prevalent-type of cancers and is increasingly common in young female population in Hong Kong. Previous study showed that significantly more breast cancer survivors (BCS) with cognitive limitations had left the workforce at 18 months post-diagnosis compared to those without impairment. For young adults, the ability to work not only fulfills financial needs; it also gives a sense of normality, provides identity and meaning as well as enhances subjective well-being. Barriers of return to work for persons surviving from breast cancer may include cognitive problems, emotional distress and other physical symptoms. Better strategies are required to understand and facilitate the process of work resumption for them.

Objectives
This pilot study is designed to investigate the associations between cognitive problems and psychological distress with work productivity and quality of life (QOL) among BCS, female subjects with musculoskeletal conditions (MSC) and healthy females (HC) of working age.

Methodology
The study targeted at female Hong Kong residents of 18 to 65 years old with full-time (>40 hours per week) or part-time (<40 hours per week) jobs prior to onset of onset of diseases. BCS and MSC groups were recruited by convenient sampling method from Breast Cancer Clinic or Occupational Therapy Department of Princess Margaret Hospital. Control subjects were identified from personal network of the study investigators. 30 female subjects were recruited in each study group. Cross-sectional survey was conducted to examine the group profiles and outcomes. Emotional distress was assessed by Hospital Anxiety and Depression Scale (HADS). Cognitive problems were identified by Cognitive Symptom Checklist (CWC-W21). Work-related problems and QOL were investigated by Work Limitation Questionnaire (WLQ) and European Organization for Research and Treatment of Cancer Quality of Life Questionnaire C30 (EORTC QLQ-C30) respectively. Kruskal-Wallis test was used to examine the differences in emotional symptoms, cognitive symptoms, self-perceived work limitation and QOL among the study groups. Multiple regression analysis was
used to examine relationships between the emotional and cognitive symptoms with work limitation and QOL in the subjects.

**Result**

Significant differences in cognitive limitations were noted with BCS group showing the highest number of symptoms (p<0.05). Work task-related cognitive symptoms were found to be significantly associated with QOL in the BCS group (p = 0.032). Despite no significant differences in work productivity loss and global QOL were found between groups, BCS group reported highest financial difficulties (p<0.05). 60% of BCS subjects reported that cognitive training would be beneficial for improving the ability in daily living or work resumption. For young BCS, cognitive problems could be substantial which would impede the process for resuming gainful employment after primary treatment. Failure of work resumption would further induce financial difficulties and impair quality of life. Early intervention may facilitate BCS to return to work and improve productivity for the economy in the long run.