550

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VALIDATION OF CAUSAL MODEL FOR CONTINUATION OF PELVIC FLOOR MUSCLE TRAINING IN FEMALES WITH LOWER URINARY TRACT SYMPTOMS

Pelvic floor muscle training is not currently covered by insurance in Japan, and treatment instructions vary among different medical institutions. Once patients have received pelvic floor muscle training instruction, they are required to continue working on the training, for which little support is provided. Existing studies have investigated the discontinuation of training, yet few have made clear reference as to what allows patients to continue pelvic floor muscle training, or the factors for successfully continued training.

Hypothesis / aims of study

Conceptual Framework for Study: As a causal model for the continuation of pelvic floor muscle training in female patients with lower urinary tract symptoms, a conceptual model has been developed based on the results of literature review and preliminary studies, with the Precede-Proceed Model (Green & Kreuter, 1991, 2005) as a base(1).

Aims of study: The present study aims to develop and examine a conceptual model for the continuation of pelvic floor muscle training in female patients, in order to gain insights into nursing support that encourages female patients with lower urinary tract symptoms to continue pelvic floor muscle training.

Study design, materials and methods

1. Study design: The present study used the cross-cutting descriptive study design to identify factors of, and their influences on, the continuation of pelvic floor muscle training in female patients with lower urinary tract symptoms.
2. Study subjects: Enrolled in the study were female patients with subjective lower urinary tract symptoms who had consulted doctors and received recommendations for pelvic floor muscle training more than one month or four weeks before. They all understood the purpose and method of the study, and gave consent. Excluded from the study were those who were aged under 20 years, had difficulties understanding and answering the questionnaire written in Japanese, and/or suffered ongoing psychiatric illness under treatment. The non-probability method was used for sampling.
3. Survey items and measuring tools:

1)Status of the continuation of pelvic floor muscle training: A questionnaire about "the details and implementation methods of pelvic floor muscle training currently underway," "comparison with instructions by healthcare provider," and "changes in implementation of training during continuation" was prepared in order to identify prescribed methods of the pelvic floor muscle training and the status of continuation among subjects.

2)Factors influencing the continuation of pelvic floor muscle training: Scales on predisposing, enabling, and reinforcing factors that influence the continuation of pelvic floor muscle training were developed by the author. As questionnaire items about subordinate concepts that constitute each factor were developed based on the literature review and preliminary studies, the content and face validities of the scales were tested.

3)Demographics: A questionnaire that covers "individual attributes," " Symptoms Questionnaires for Urinary incontinence", and "scale on the satisfaction in life due to urinary incontinence" was developed to identify the individual characteristics of subjects(2).

4.Data collection and analysis method: Facilities and healthcare providers that have provided instructions for pelvic floor muscle training and reported them were screened, and cooperation in our study was requested. Data analysis included descriptive statistical examination of data, followed by the examination of measuring tool validity based on factor analysis to calculate confidence coefficients, as well as correlation analysis, testing of differences in mean values, and multiple linear regression analysis for understanding the relationships between scales. Finally covariance structure analysis was performed to investigate the causal model for factors influencing the continuation of pelvic floor muscle training and the status of continuation. Association between the status of continuation of pelvic floor muscle training and the factors influencing the status was analyzed to examine the causal model.

Results

There were a total of 263 responses, of which 256 were valid. The mean age of the subjects was 60.9 years. The subjective lower urinary tract symptoms of study subjects at the initial consultation (baseline) were urinary incontinence, pollakiuria, and subjective ptosis of the vulva, all of which significantly improved compared to baseline based on the results of symptom questionnaires.

1. Constituent factors and reliability of the scale: Factor analysis identified five explanatory variables, or "factors influencing the continuation of pelvic floor muscle training": “self-efficacy of pelvic floor muscle exercise,” "education (instructions) by healthcare providers," "rapport with healthcare providers," "strategy for performing pelvic floor muscle exercise," and "negative feelings toward symptoms." Cronbach's alpha as an indicator of confidence coefficient of the scale was satisfactorily good at larger than 0.80.
2. The "continuation of pelvic floor muscle training" scale as a dependent variable was developed by putting the "frequency per week," "total number per day of pelvic floor muscle exercises," "total number of seconds per day of performing pelvic floor muscle exercise," and the "satisfactory continuation status" the "changes during continuation period," excluded, the covariance structure analysis used the including taking into consideration the results. The scale had Cronbach's alpha of 0.7 .
3. The final model for the "continuation of pelvic floor muscle training" in female patients with lower urinary tract symptoms had a positive correlation path to the “self-efficacy of pelvic floor muscle exercise,”
4. Positive path coefficients were also observed between the “self-efficacy of pelvic floor muscle exercise,” and "rapport with healthcare providers," "education (instructions) by healthcare providers," and "strategy for performing pelvic floor muscle exercise," respectively.
5. Positive path coefficients were observed in comparison of the “self-efficacy of pelvic floor muscle exercise,” with the "negative feelings toward symptoms" to "satisfactory continuation status."
6. Association among the five explanatory variables were as follows: there was also positive correlation between the “self-efficacy of pelvic floor muscle exercise,” and "strategy for performing pelvic floor muscle exercise," "rapport with healthcare providers," and "education by healthcare providers," respectively; between the "education by healthcare providers" and "rapport with healthcare providers" and "strategy for performing pelvic floor muscle exercise," respectively; and between "rapport with healthcare providers" and "strategy for performing pelvic floor muscle exercise." Meanwhile, the "negative feelings toward symptoms" showed no

significant correlation with any other factor.

Interpretation of results

A causal model for the "continuation of pelvic floor muscle training" in female patients with lower urinary tract symptoms and its influencing factors was used to understand relevant phenomena. Indicators to determine the "status of continuation" were found to be the "frequency per week," "total number per day of pelvic floor muscle exercises," and "total number of seconds per day of performing pelvic floor muscle exercise," while the "satisfactory continuation status" is associated with the recognition of "changes during continuation period." These results were found to be influenced by the recognition of "self-efficacy of pelvic floor muscle exercise," The successful "continuation of pelvic floor muscle training" requires correct understanding of knowledge following the "education (instructions) by healthcare providers," as well as the "strategy for performing pelvic floor muscle exercise," which is convenient for patients to incorporate such exercises in their daily life. It has also been shown that, during the process of developing confidence to continue pelvic floor muscle training while having "negative feelings toward symptoms," the recognition of a relationship such as "rapport with healthcare providers" to allow suffering female patients to seek consultation and advice at ease also makes an important constituent.

Concluding message

It has been demonstrated that the continuation of pelvic floor muscle exercise involves multiple dimensions of concepts and cannot be understood with a single indicator. It is therefore necessary for nurses to understand such complex relationships, assess pathological conditions, and provide knowledge, while accepting patient feelings and developing a relationship of trust so that patients may seek for advice at ease. These factors have been considered to be the sources for self-efficacy, hence the continuation of pelvic floor muscle exercise.

References

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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**