Development of instrument to measure perception of healing environment in hospital

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Abstract. This study aimed to develop an instrument to measure perception of the healing environment in hospitals and examine its reliability and validity through literature review and interviews with experts. Cronbach’s alpha coefficient, item total correlation coefficient, and factor analysis were used to test validity and reliability of the instrument in a total of 551 nurses. Cronbach’s alpha was .955 for 30 items in total and the KMO value (.930) and Bartlett’s test of sphericity ($\chi^2=4434.611$, $p<.001$) suggested statistical significance. Six factors were drawn, with the total accumulated variate at 68.40%; Factor 1 accounted for 16.82%, Factor 2 15.70%, Factor 3 13.57%, Factor 4 8.48%, Factor 5 7.78%, and Factor 6 6.03%. On the basis of the results, the instrument to measure perception of the healing environment is reliable and valid and is expected to be useful in measuring perception of the healing environment in hospitals.

Keywords: healing environment, perception, instrument

1 Introduction

With the recent shift in the health paradigm, health is not considered simply as a disease-free condition but as maintenance of a physically, mentally, and socially stable state. As perception of a medical institution has been expanded to consider it as a place to deal with the whole-personal aspect, including physical, mental, and social health, hospitals have been changed structurally and functionally [1]. With increasing concerns about a healing environment that may affect health of patients and their family in multilateral aspects, it is considered as an important concept in architecture and design of hospitals.

The healing environment is the condition for healing the human body, mind, and soul and can be defined as a comprehensive concept that covers physical, psychological, social, and cultural environments as well as the therapeutic one based

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on medical treatment and science and technology for patients suffering from diseases [2,3]. The healing environment in medical institutions can help patients and their families relieve stress, make them more satisfied, have a positive impact on recovery of the patients, and improve the general quality for them. It can also help the staff reduce stress and fatigue, improve nursing ability, increase work satisfaction, and reduce the turnover rate [3,4,5,6]. These results imply that the hospital environment can be a good means to improve perception of and satisfaction with the quality of service provided to patients and their family. Nurses are medical experts who play an important role in serving patients and it is important to determine how they perceive the healing environment. The quality of nursing provided by nurses may depend on the scope and elements of the healing environment they perceive. Literature review suggests that a supportive and healing work environment can reduce stress and the turnover rate among nurses and other employees and make them more satisfied, thus maintaining and improving the quality of service provided to patients. However, since there is no validated instrument to measure perception of the healing environment among nurses in South Korea, it is necessary to develop such an instrument.

2 Method

2.1 Design

This is methodological research to develop an instrument to assess perception of the healing environment among nurses in hospitals.

2.2 Subjects

Convenience sampling was made with nurse practitioners who understood the purpose of this study and agreed to participate in the research in ten general hospitals. The number of subjects was determined using a G*Power3.1.2 program and 551 nurses (213 in Sample 1 and 338 in Sample 2) were finally analyzed, with the exception of those giving insincere responses.

2.3 Process of development instrument

A total of 30 items were selected: 27 in the five-point scale, which were considered as essential to the healing environment, were made on the basis of literature review and 3 were added through in-depth interview with an expert. The items were validated by two nursing professors, three nurse practitioners, and one expert in research methodology.
2.4 Data collection and ethical consideration

Data were collected with the approval of the Institutional Review Board in H University. With the ethical aspect taken into account, the participants were given explanation of the specific purpose and methods of the study; then, those agreeing to participate in the research were given explanation of anonymity, confidentiality, and the right to veto participation in the research and a survey was conducted in the subjects consenting to participation in the research from April to November 2012.

2.5 Data analysis

The collected data were analyzed using SPSS Win 19.0 and AMOS 18.0 programs. The instrument was tested for construct validity by exploratory and confirmatory factor analyses and its reliability was estimated using Cronbach’s α coefficient.

3 Results

3.1 General characteristics of subjects

The exploratory factor analysis found that the subjects in Sample 1 were 29.7±6.6 years old on average and that 97.7% of them were female. The mean career was 4.9 years. The confirmatory factor analysis found that the subjects in Sample 2 were 31.4±6.8 years old on average and that 99.1% of them were female. They had 6.6 years of nursing career on average.

3.2 Results of Validation

KMO, which shows goodness-of-fit of a sample for exploratory factor analysis, was estimated to be .930 and Bartlett’s test of sphericity demonstrated statistically significant differences in the correlation matrix among items (χ²=4434.611, p<.001); thus, the items in this study proved to be appropriate for factor analysis.

From the exploratory factor analysis, six factors were drawn, with the total accumulated variate at 68.40%. Factor 1 accounted for 16.82%, Factor 2 15.70%, Factor 3 13.57%, Factor 4 8.48%, Factor 5 7.78%, and Factor 6 6.03%. Factor 1 was named stress restoration, Factor 2 a sense of comfort, Factor 3 ease of space perception, Factor 4 privacy, Factor 5 social support and interaction, and Factor 6 individual personalized service.
3.3 Score distribution and results of reliability test

As for score distribution and reliability of the 30 items whose construct validity was confirmed, Factor 1 scored 4.06±.72, Factor 2 4.32±.64, Factor 3 4.44±.60, Factor 4 4.18±.72, Factor 5 4.29±.60, and Factor 6 3.39±.86 on average. Cronbach’s $\alpha$ ranged from .76 to .90 for the six sub-categories.

4 Conclusions

In this study, an instrument to measure perception of the healing environment in hospitals was developed and proved to be appropriate on the basis of validity and reliability tests following the preliminary stage. Nurse practitioners had very high levels of perception of the healing environment but had the lowest level of perception of customized service provision among the sub-areas; therefore, it is necessary to improve the perception and environment for this area. On the basis of the results, it is not only possible to assess perception of the healing environment but also to provide basic data that can help develop an intervention plan to improve the perception and create a positive healing environment for patients and their family and for the staff.

References