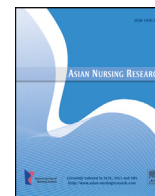


Contents lists available at [ScienceDirect](http://ScienceDirect.com)

Asian Nursing Research

journal homepage: www.asian-nursingresearch.com

Research Article

Nurses' Educational Needs Assessment for Financial Management Education Using the Nominal Group Technique

Wonjung Noh, PhD, RN,¹ Ji Young Lim, PhD, RN, MBA^{2,*}¹ College of Nursing, Gachon University, Incheon, South Korea² Department of Nursing, Inha University, Incheon, South Korea

ARTICLE INFO

Article history:

Received 14 April 2014

Received in revised form

20 January 2015

Accepted 13 March 2015

Keyword:

educational needs assessment

financial management

focus groups

nursing education

SUMMARY

Purpose: The purpose of this study was to identify the financial management educational needs of nurses in order to development an educational program to strengthen their financial management competencies.

Methods: Data were collected from two focus groups using the nominal group technique. The study consisted of three steps: a literature review, focus group discussion using the nominal group technique, and data synthesis.

Results: After analyzing the results, nine key components were selected: corporate management and accounting, introduction to financial management in hospitals, basic structure of accounting, basics of hospital accounting, basics of financial statements, understanding the accounts of financial statements, advanced analysis of financial statements, application of financial management, and capital financing of hospitals.

Conclusions: The present findings can be used to develop a financial management education program to strengthen the financial management competencies of nurse.

Copyright © 2015, Korean Society of Nursing Science. Published by Elsevier. All rights reserved.

Introduction

Financial management skills should be considered a core competence for nursing managers [1], as they continually influence healthcare decisions to advocate for more effective resource allocation [2]. According to the scope and standards of practice of the American Nurses Association, financial competency aids nurses in using resources effectively and in maintaining a high standard of nursing practice [2,3]. In American nursing units, nurse managers engage in a range of financial management including articulating business models, analyzing financial statements, managing financial resources, and educating team nurses on using their financial knowledge [1]. In Korea, competition between hospitals has recently intensified as a result of changes in their business environment [4]. According to the recent change, nurse managers now view financial management skills as a core competency due to their expanded roles in improving the financial performance of nursing units. Within the field of nursing, financial competencies include

not only the ability to check revenue but also proficiency in analyzing and applying financial information [5].

To obtain financial competency, the development of financial management education programs is needed for both nurses and nurse managers. In particular, such programs would ideally provide nurses with greater financial oversight, as well as strengthen the relationship between hospitals' nursing and finance departments [6]. Although financial management education programs are needed, there is a notable lack of such programs in Korea. According to a review of Korean financial management education programs, just 3 examples were included in 982 refresher education programs for nurses from August 2011 to July 2012 [7]. In addition, financial issues and contents are not sufficiently dealt with in undergraduate and graduate nursing curriculums. For example, Korea currently has over 200 nursing schools; however, only 3 colleges include a finance course as part of their graduate program. Due to this shortage, there is a need to develop a financial management education program for Korean nurses.

In order to develop an efficient financial management education program for nurses, it is first necessary to identify the pertinent financial knowledge that is currently lacking among nurses—in other words, their educational needs. Studies show that identifying

* Correspondence to: Ji Young Lim, PhD, MBA, Department of Nursing, Inha University, 100, Inha-ro, Nam-Gu, Incheon 402-751, South Korea.

E-mail address: lim20712@inha.ac.kr

educational needs is the first stage in preparing a continuing education program for nurses [8]. One way of identifying these needs would be through use of the nominal group technique (NGT), a systematic method for gathering the ideas or suggestions of individuals concerning a wide variety of items [9]. Such an approach is widely used within the healthcare environment and demonstrates suitable research priorities [10]. Through the collection of data from experts using NGT, researchers are able to identify creative ways to solve problems in the decision-making scenarios [11]. Previous studies have also reported that NGT is an effective tool for assessing the educational needs of nurses and in prioritizing items [12,13].

The purpose of the present study is to identify the educational needs of Korean nurses and to prioritize the desired components of financial management education programs that would strengthen financial management competency.

Methods

This study used the NGT with two focus groups in order to collect information on educational needs in the area of financial management. The NGT is a useful tool for reaching consensus by gathering information from participants. According to the guidelines suggested by the Centers for Disease Control and Prevention [9], the NGT consists of four steps: card sorting, recording of sorted results, discussing the results, and voting on the results. To prepare for application of the NGT, the researchers first conducted a comprehensive literature review in order to collect content items related to the development of a financial management education program for nurses. Two focus group discussions were then performed using the NGT. The results were synthesized using the rank score of each component to determine the financial management educational needs of nurses (see Figure 1).

Study participants

The participants in this study were 11 nurses who had been working for more than 3 years in the hospital. Participants were divided into two groups for the focus group discussions. Group A consisted of six nurses (aged 27–49 years) who held an interest in the hospitals' financial management but did not major in nursing

management during their graduate studies. This group had an average of 13 years of hospital nursing experience and consisted of three staff nurses and three charge nurses who were working in the medical care unit, special care unit and outpatient unit. Group B consisted of five nurses (aged 33–46 years) that had majored in nursing management and who had an average of 16 years of hospital nursing experience. This group consisted of three staff nurses, one charge nurse and one unit manager that were working in the medical care unit, surgical care unit and outpatient unit. Among them, only the unit manager had any experienced of financial management.

Ethical considerations

After obtaining approval from the institutional review board from the Inha University Hospital (IUH IRB 12-1525), the researchers advertised for study participants from the hospital. Following an explanation of the purpose and procedure of the study, nurses who had voluntarily applied to join the focus group discussion were asked to provide their written informed consent. This consent form stated that the participants could withdraw at any time, and that their information would be used only for the purpose of this study.

Procedure

Preparation of cards following a literature review

In order to identify the key components for financial management education, the researchers conducted an integrative literature review and searched websites from June to September 2012. A wide range of references were included, such as web databases (Medline, CINAHL, and Research Information Sharing Service (RISS)), textbooks on financial management, financial course syllabi retrieved from nursing and healthcare, Korean hospital financial reporting standards reports and the managerial department homepages of 103 universities in Korea. Keywords such as financial management, finance, health, and nursing were entered into Internet search tools in order to identify potential source materials, while the two researchers performed the selection process. A total of nine syllabi related to both undergraduate courses and graduate courses in nursing, business, accounting, and

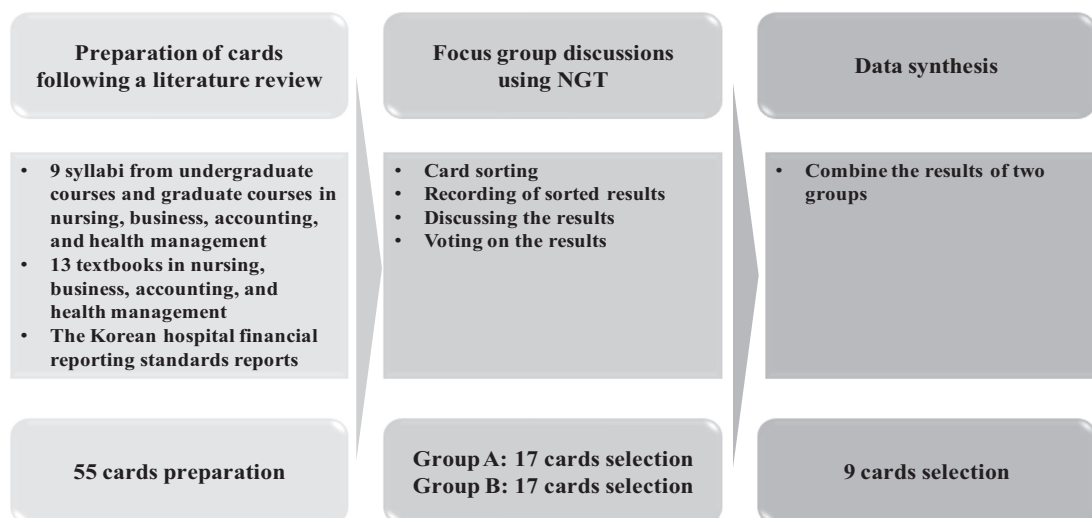


Figure 1. The study process. Note. NGT = nominal group technique.

health management were collected from the website of six universities. Thirteen textbooks including nursing, business, accounting, and health management were reviewed. The Korean hospital financial reporting standards reports were obtained from the website of the Korea Health Industry Development Institute, the affiliated organization of the Health and Welfare Ministry. After gathering and reviewing this literature, the researchers identified and extracted the relevant contents related to financial management education from each source. Next, the researchers compared the terms extracted from each source and identified the 55 most common items related to the content of financial management education. One item card for each of the 55 items was then produced in order to stimulate active discussion during the focus group discussions. Each item card included the item title and a detailed explanation of the term.

Focus group discussions using the NGT

Focus group discussions using the NGT were conducted on September 19 and again on September 26, 2012. Participants were nurses who had been working for more than 3 years in the hospital and were divided into two groups: Group A and B. Group A consisted of six nurses and Group B consisted of five nurses. The discussion process followed the four steps suggested by the Centers for Disease Control and Prevention [9]. The first step, card sorting, required each participant to sort the 55 cards into perceived degrees of necessity for inclusion in a financial management education program for nurses: “completely unnecessary” was assigned 1 point, “moderately unnecessary” was assigned 2 points, “neither unnecessary/necessary” was assigned 3 points, “moderately necessary” was assigned 4 points, and “completely necessary” was assigned 5 points. In the second step, each participant recorded the ranking for each card and the reason for that ranking. During the card sorting and recording stages, no discussion or interaction was permitted between participants. In the third step, the participants discussed their results with each other, with emphasis being placed on the reason why they made their decisions. Finally, all participants voted on the priority of the cards based on the discussion and continued until a consensus was reached. The duration of each discussion was 120–180 minutes.

Data synthesis

After the focus group discussions, the cards ranked as “completely necessary” by both groups were selected as the desired financial management education contents for nurses. Finally, based on the final cards selection results, the researchers further synthesized the key components of a financial education program for nurses according to the sources in the literature review.

Results

In this study, the results section comprises of three parts. First, various sources related to financial management education were reviewed in order to create the cards for each potential contents for a financial management education program. Then, the NGT was applied to two focus group discussions. Finally, in the third section, the results of the focus group discussions were combined in order to determine the desired course content of a financial management education program for nurses.

Preparation of cards following a literature review

In preparing cards that reflected the desired content of a financial management education program for nurses, various content sources were analyzed by the two researchers. Following

a literature review, 55 items were selected and printed on cards. The cards reflected a range of items such as the basics of accounting, financial management, concepts and practice of financial statements, comparison of financial analysis between corporations and hospitals, and explanations of accounts. Using these cards, each participant sorted the 55 cards according to the degree to which they perceived them to be an essential component of a financial management education program for nurses. There was no discussion or interaction among participants during this step.

Focus group discussions using the NGT

During the preliminary sorting step, participants in Group A identified a total of 28 cards as “completely necessary” for inclusion in a financial management education program. Through the process of discussion, the group unanimously agreed on 17 of these. In the same way, Group B’s participants initially selected a total of 18 cards and, after discussion, also unanimously identified 17 of them as “completely necessary” for inclusion in a financial management education program. Group A particularly emphasized the necessity of creating financial statements, while Group B assigned particular importance to the differences in management activities between corporations and hospitals (see Table 1).

Data synthesis

In order to combine the results of the two groups, researchers reviewed the complete set of 34 cards selected as “completely necessary” by each group. Of this number, both groups had selected 10 cards that overlapped, so these cards were considered to represent the desired contents for financial management education for nurses. After review, the cards “basics of financial management in the hospital” and “concepts of financial management in the hospital” were combined into “basic concepts of financial management in the hospital”. Finally, the selected nine cards were as follows: “basics of accounting in the hospital”, “objective of financial management in the hospital”, “basics concepts of financial management in the hospital”, “basics of financial management in the hospital”, “comprehensive financial management in the hospital”, “financial statements”, “comprehensive financial statements in the hospital”, “capital financing of the hospital”, and “accounting and financial management in the hospital”.

In order to develop the necessary substantial learning criteria, the nine selected cards were rearranged in logical order and confirmed as the nine key components that should be included in financial education program. These key components were classified into three categories: comprehension of financial management, analysis of financial statements, and application of financial ratios. The original nine cards, the nine key components, and the three categories of financial management education are shown in Figure 2. The ranking results of nine cards and the subsequent nine key components with the learning subjects are summarized in Table 2.

Discussion

This study was conducted in order to identify the educational needs of nurses with regard to financial management. Two groups of nurses chose 9 cards from a total of 55 cards. The cards spread contained a wide variety of educational possibilities ranging from basic-level financial management to the advanced financial management skills that are needed in hospital management.

The results of this study are in accordance with those of earlier studies. Muller and Karsten indicated that an understanding of the

Table 1 Card Sorting Results by Group.

Cards	Mean scores of Group A (n = 6)	Mean scores of Group B (n = 5)	Combined mean scores (N = 11)	"Necessary" ^a responses (%)
Accounting in modern society	3.50	4.00	3.73	63.6
Basic concepts of financial accounting	2.17	3.80	2.91	36.4
Using accounting information	2.33	3.20	2.73	18.2
Corporate management activity and accounting	3.67	4.00	3.82	54.5
Basics of accounting in the hospital	4.67	4.40	4.55	90.9
Accounting system and financial statement	3.17	3.00	3.09	18.2
The nature of hospital accounting	4.17	4.00	4.09	81.8
Accounting	3.33	3.40	3.36	63.6
Analysis of financial statements	3.50	3.40	3.45	54.5
Characteristics of financial management in the hospital	4.17	4.60	4.36	72.7
Objective of financial management in the hospital	4.00	5.00	4.45	81.8
The history of financial management in the hospital	3.67	4.20	3.91	54.5
Basics concepts of financial management in the hospital	4.67	4.60	4.64	90.9
Financial management	4.17	4.20	4.18	72.7
Decision of investment in the hospital	3.17	4.20	3.64	54.5
Forecasting and planning in the hospital	3.83	3.20	3.55	54.5
Financial analysis in the hospital	3.33	3.40	3.36	54.5
Comprehension of finance and accounting in the corporate	3.33	3.60	3.45	45.5
Financial analysis and forecasting in the hospital	4.50	4.40	4.45	81.8
Basics of financial management in the hospital	4.00	4.40	4.18	81.8
Differences between corporate and hospital	4.50	3.80	4.18	81.8
Characteristics and structure in the hospital	4.50	4.40	4.45	100.0
Functions of financial management	3.67	3.00	3.36	54.5
Financial forecasting and control	4.50	3.40	4.00	81.8
Functions of financial management in the hospital	3.67	3.40	3.55	45.5
Comprehensive financial management in the hospital	4.67	4.80	4.73	100.0
Financial statements	4.50	4.20	4.36	90.9
Basics of financial statements analysis	3.17	3.40	3.27	45.5
Balance accounts and financial statements	3.33	3.00	3.18	45.5
Comprehensive financial statements	5.00	3.80	4.45	81.8
Comprehensive financial statements in the hospital	4.17	4.40	4.27	90.9
Financial statements analysis	4.33	4.20	4.27	81.8
Components of financial statements	3.50	3.20	3.36	54.5
Account records and circulation	1.83	2.60	2.18	9.1
Accounting circulation process in the hospital	3.50	3.20	3.36	63.6
Theory of financial accounting	4.17	3.60	3.91	54.5
Comprehension of financial accounting in the corporate	4.33	3.20	3.82	63.6
Accounting circulation process	2.83	2.60	2.73	27.3
Basics of accounting circulation process in the hospital	4.50	3.00	3.82	72.7
Recording process of financial statements	2.67	3.00	2.82	36.4
Process of trading record	2.50	2.60	2.55	18.2
Working capital management in the hospital	4.50	4.00	4.27	81.8
A title of account (assets)	3.33	2.20	2.82	36.4
A title of account (liabilities)	4.00	2.20	3.18	45.5
Capital account	4.17	2.60	3.4	63.6
Capital financing of the hospital	4.17	4.60	4.36	72.7
Working capital management	4.50	3.60	4.09	72.7
Accounting management by accounts (assets)	4.00	3.20	3.64	63.6
Accounting concepts of capital	4.17	3.80	4.00	63.6
Accounting management by accounts (liabilities)	2.67	3.80	3.18	45.5
Financial statements analysis in the hospital	4.67	3.40	4.09	63.6
Leverage analysis	3.00	2.00	2.55	27.3
Financial ratio analysis	3.00	3.20	3.09	45.5
Financial ratio analysis of corporate	3.33	3.00	3.18	54.5
Accounting and financial management in the hospital	4.83	4.80	4.82	100.0

Note. ^aPercentage of responses selected as "moderately necessary" or "completely necessary".

definition of finance and the key concepts in the field act as a bridge in reducing the gap between nursing and financial knowledge [2]. Subsequently, nurses must learn the language of finance in order to obtain adequate financial management skill [6]. This is also significant as an understanding of finance is useful when the nurses communicate with their hospital's chief financial officer [14]. As a result, nurse leaders or managers typically have to improve their financial management knowledge and skills. Talley, Thorgrimson, and Robinson suggest therefore that education programs for nursing leaders should include the essential concepts of financial management [15]. Thus, our results show similarity to the findings of previous research in terms of highlighting the needs for financial management education for nurses.

The findings of this study differ from the typical content of textbooks related to financial management for nurses [16,17]. For the most part, these materials focus on the concepts used in financial statements and analysis of financial statements. On the other hand, research suggests that nurse leaders should develop their financial management skills in order to enhance their competency in collaborating with their hospital's chief financial officer. For such cooperation to work successfully, nurses must move from having rudimentary knowledge of financial management to application of financial management [14]. According to the results of the present study, nurses need to learn not only how to analyze financial statements, but also the basics of hospital financial management, concepts of financial management and the relation of

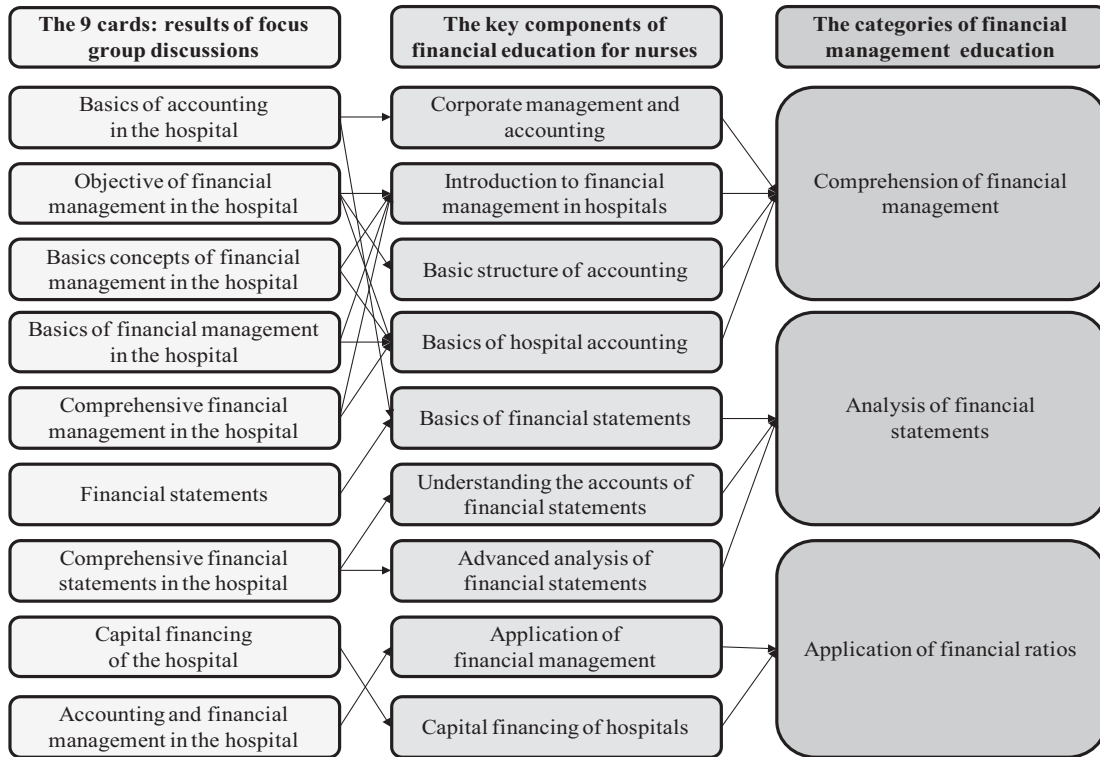


Figure 2. The key components of financial management for nurses.

financial management to hospital management. These needs were highlighted by the high-ranked topics selected during the focus group discussions.

Through this study, we discovered that nurses' financial education needs range from basic-level understanding of financial concepts to more advanced practical skills, such as the application of financial ratio analysis. This was expressed through the development of three categories of financial management education:

level one, comprehension of financial management; level two, analysis of financial statements; level three, application of financial ratio. The five cards related to the basics of accounting and financial management resulted in the creation of four key components. These key components were related to the comprehension of financial management. Analysis of financial statements, the level two category, was derived from three key components extracted by three cards. Finally, application of financial ratios consisted of two

Table 2 Ranking Results and Associated Explanation (N=11).

Cards	Explanation	Group A rankings (n = 6)	Group B rankings (n = 5)
Basics of accounting in the hospital	<ul style="list-style-type: none"> • Definition of accounting • Basic assumption in accounting • Hospital accounting characteristics 	2	6
Objective of financial management in the hospital	<ul style="list-style-type: none"> • Objectives of corporate financial management • Objectives of hospital financial management 	8	1
Basics concepts of financial management in the hospital	<ul style="list-style-type: none"> • Role of a hospital financial manager • Hospital characteristics 	2	4
Basics of financial management in the hospital	<ul style="list-style-type: none"> • Functions of hospital financial management • The importance of hospital financial management 	8	6
Comprehensive financial management in the hospital	<ul style="list-style-type: none"> • Consideration of hospital financial management • Value assessment 	2	2
Financial statements	<ul style="list-style-type: none"> • Balance sheets • Income statements • Cash flow statements 	5	9
Comprehensive financial statements in the hospital	<ul style="list-style-type: none"> • Purpose of financial statements • Strengths and weaknesses of financial statements 	6	6
Capital financing of the hospital	<ul style="list-style-type: none"> • Financial statement analysis • Sources of capital structure • Capital costs 	6	4
Accounting and financial management in the hospital	<ul style="list-style-type: none"> • Purposes of hospital accounting • Categories of hospital accounting • Hospital financial management 	1	2

key components that resulted from two cards. The nine cards lead to nine key components that in turn created the three categories of courses. These categories are significant because they not only cover the content of American nursing schools' MBA programs that include a range of levels from basic to comprehension but also focus on the nursing environment. Nevertheless, further studies concerned with both the development of an educational program designed to strengthen the financial management competencies of nurses and the verification of the efficacy of such a program, are needed.

In this study, researchers identified the most important components for a financial management education program for nurses. These results may be applied to introductory nursing programs, continuing education programs for nurse managers and graduate financial management courses. Financial management education based on these components will act to strengthen the financial competencies of nurses in keeping up with changes in the competitive healthcare environment.

Conclusion

The financial management education needs of nurses were determined through focus group discussions using the NGT. The NGT is an effective method for collecting ideas from groups. The results of this study clearly demonstrate that nurses have a wide range of financial management educational needs. The three categories of education needs that were derived from the nine key components of financial management are unique to this study and have not before been identified in current nursing textbooks or studies. The results of this study will serve as a basis for the development of an effective financial management education program for nurses.

Conflict of Interest

The authors declare no conflict of interest.

Acknowledgments

This work was supported by the Korea Science and Engineering Foundation (KOSEF) grant funded by the Korea government (MEST; No. 2012R1A1A3005156) and Inha University Research Grant. This

work is the first step of "The Development and Effectiveness of Web-Based Financial Management Education Program for Nurses" project, which consisted of three steps: educational need assessment using focus group discussion, development of educational key components, and evaluation of education program.

References

- American Organization of Nurse Executives. AONE nurse executive competencies. *Nurse Leader*. 2005;3(1):15–21.
- Muller R, Karsten M. Do you speak finance? *Nurs Manage*. 2012;43(3):52–4.
- American Nurses Association. *Scope and standards of practice*. 2nd ed. Washington, DC: Author; 2010.
- Kang KH, Kim IS. [Development of performance measure indicators in hospital nursing units]. *J Korean Acad Nurs*. 2005;35(3):451–60. Korean.
- Lim JY, Noh W, Oh SE, Kim OG. [Financial ratio analysis for developing nursing management strategies in university hospitals]. *J Korean Acad Nurs Adm*. 2013;19(1):7–16. <http://dx.doi.org/10.1111/jkana.2013.19.1.7>. Korean.
- Douglas K. Taking action to close the nursing-finance gap: learning from success. *Nurs Econ*. 2010;28(4):270–2.
- Korea Nurses Association Education Center. [The schedule of offline education for RN] [Internet]. 2011 [cited 2012 July 25]. Available from: <http://edu.koreanurse.or.kr/offline/>
- Brennan M. An evaluation of perceived education and training needs of staff nurses and care officers. *J Forensic Nurs*. 2006;2(4):175–83.
- Centers for Disease Control and Prevention. Gaining consensus among stakeholders through the nominal group technique. 2006 [cited 2013 June 19]. Available from: <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief7.pdf>
- Shortt S, Guillemette JM, Duncan AM, Kirby F. Defining quality criteria for online continuing medical education modules using modified nominal group technique. *J Contin Educ Health Prof*. 2010;30(4):246–50. <http://dx.doi.org/10.1002/chp.20089>
- Stolper E, Van Leeuwen Y, Van Royen P, Van De Wiel M, Van Bokhoven M, Houben P, et al. Establishing a European research agenda on 'gut feelings' in general practice. A qualitative study using the nominal group technique. *Eur J Gen Pract*. 2010;16:75–9. <http://dx.doi.org/10.1111/j.1744-6171.2012.00335.x>
- Inoue M, Del Fabbro L, Mitchell M. Assessing the educational needs of mental health nurses working in an adolescent inpatient psychiatric ward in Japan. *J Child Adolesc Psychiatr Nurs*. 2012;25(3):124–9. <http://dx.doi.org/10.1111/j.1744-6171.2012.00335.x>
- Parlour R, Slater P. Developing nursing and midwifery research priorities: a health service executive (HSE) North West study. *Worldviews Evid Based Nurs*. 2014;11(3):200–8. <http://dx.doi.org/10.1111/wvn.12035>
- Stichler JF. The bottom line: financial management skills for nurse leaders. *Nurs Womens Health*. 2008;12(2):157–62. <http://dx.doi.org/10.1111/j.1751-486X.2008.00309.x>
- Talley LB, Thorgrimson DH, Robinson NC. Financial literacy as an essential element in nursing management practice. *Nurs Econ*. 2013;31(2):77–82.
- Finkler SA, Kovner CT, Jones CB. *Financial management for nurse managers and executives*. New York: Elsevier Health Sciences; 2007.
- Penner SJ. *Economics and financial management for nurses and nurse leaders*. New York: Springer Publishing Company; 2013.