COMPARISON OF EVALUATION OF QUALITY OF DOCTORAL NURSING EDUCATION IN JAPAN BY STUDENTS, GRADUATES AND FACULTY: CROSS-SECTIONAL QUESTIONNAIRE SURVEY

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Comparison of Evaluation of Quality of Doctoral Nursing Education in Japan by Students, Graduates and Faculty: Cross-sectional Questionnaire Survey

Key words: Comparative research, Doctoral nursing education, Evaluation, Japan

Abstract

Evaluation of doctoral education in nursing is needed with the rapid increase in doctoral nursing programs in Japan. This study aimed to compare the evaluations of doctoral nursing education by students, graduates, and faculty. All 46 doctoral nursing programs in Japan were target settings. 127 students who had been in the doctoral program for at least 1 year, 24 graduates and 87 faculty members had responded to the survey. A questionnaire with 17 items for program evaluation, 12 items for faculty evaluation, 9 items for resource evaluation, and 3 for overall evaluations was distributed in November and December 2008. Responses to 3 program evaluation items, 5 faculty evaluation items and 6 resource evaluation items indicated significant differences among evaluators. While 79.2% of graduates responded positively that the number of faculty members was sufficient to facilitate learning, only 36.1% of faculty members and 49.6% of students responded affirmatively. Graduates' ratings were the most positive and faculty members were the least positive, especially for infrastructure or equipment such as libraries, computers, and the number of technical and support staff. The significant differences among the evaluators suggested that having evaluators in various roles is important to evaluate the quality of doctoral nursing education.

INTRODUCTION

As the tasks of nurses become more advanced and complex, the education of nurses should be provided at an advanced level (McKenna, 2005). The rapid increase in doctoral programs in nursing is a worldwide trend. Japan is no exception. In Japan, the first nursing doctoral program was initiated in 1966 at the University of Tokyo, which was based on health sciences, and the nursing was a small part of them. Later, in 1988, a doctoral program was developed specifically for nursing at St. Luke's College of Nursing in Tokyo. The number of such programs was 14 in 2000, 30 in 2005, and currently there are 54 doctoral programs in nursing.

This rapid growth has caused concern about the quality of such education (Anderson, 2000; Kim et al., 2010). Quality assurance can only be successful when the evaluation activities are carried out in a systematic and structured fashion and integrated into an organization's regular work patterns (Dolmans et al., 2003). Various approaches for assurance of the quality of higher education programs have been implemented in many western countries, not only in education of health professionals but for higher education in general (Dolmans et al., 2003; Mizikaci, 2006).

In Japan, a quality assurance and accreditation system was introduced in 2004 as a new national evaluation scheme for further development of Japanese higher education. This is a mandatory scheme for universities and colleges that provides mechanisms through which conditions within the institution, such as organizational management and academic activities, can be evaluated by certified evaluation and accreditation organizations. Universities, including graduate schools, are obliged to undergo an evaluation at least once every seven years under the School Education Law (Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology, 2009). The content of the certified evaluation and accreditation encompasses 11 areas, including curriculum, faculty, resources, and performance of the graduates (National Institution for Academic Degrees and University Evaluation, 2009). This accreditation is given to the university as a whole, but departments within the university, such as nursing departments, are not evaluated individually.

On the other hand, in the proposal of the Central Council for Education entitled "Toward the Construction of a Bachelor Course Education", field-specific evaluation by a third party is mentioned as an important issue in the future, and universities, colleges, and associated

organizations are expected to build a system to guarantee the quality of education specific to each field (Central Council for Education, 2008). However, criteria for the evaluation of higher education in nursing have been under review at the Committee for Creating an Evaluation System on Nursing Programs in the Japanese Association for Nursing Programs in University, doctoral programs in nursing are not yet evaluated individually.

Background

As for doctoral programs in nursing, Kim et al. (2006) developed guidelines for quality criteria, standards, and indicators for such programs based on evaluations in many countries.

Earlier studies assessed the quality of nursing doctoral education in the U.S. and obtained information only from the viewpoint of providers, such as school administrators (Kim et al, 2010). However, there has been consensus on the importance of evaluations by those playing various roles within such programs, such as students, graduates, and faculty members, for a comprehensive understanding of a program's quality. (Berk, 2009; Jahangiri et al, 2008; Kjellgren et al., 2005; Kogan and Shea, 2007). The need for involving students and graduates, as well as employers and faculty members, in the evaluation of doctoral programs in nursing was pointed out by Kjellgren et al. (2005).

Earlier reports have addressed the issue of the “evaluator” in the evaluation of education programs in other areas of health care. Kogan and Shea (2007) indicated that it was desirable that a course be evaluated by current students, former students and faculty members and that evaluation of the effectiveness of teaching by current/former students might be more reliable than that by faculty members. A trial of utilization of the 360 multisource feedback model (i.e., feedback from multiple evaluators), which is popular in the area of management or industry, was reported for the area of medical education (Berk, 2009). Jahangiri et al. (2008) suggested that triangulation in an evaluation was important for assessing teaching effectiveness, but triangulation was not implemented sufficiently in the area of dental educational programs.

However, in almost all of these reports, the issue of concern was the evaluation of the effectiveness of teaching by individual faculty members, and trials of program evaluations from

various viewpoints were rarely reported. It is important to compare the results of evaluations by multiple evaluators having various roles in the program.

Aims

This study aimed to compare the evaluations of quality of doctoral nursing education by students, graduates, and faculty.

METHODS

Design

A cross-sectional comparative survey design.

Participants

Target samples were all of the 46 doctoral nursing education programs in Japan in 2008. Our target participants were “students”, “graduates” and “faculty” in each program. “Students” were doctoral nursing students who had been in the program for at least 1 year, “graduates” were former students who had left the program with or without a doctoral degree after April 2006, and “faculty” included only those who could serve on dissertation committees.

Data collection

In November 2008, investigators mailed to the directors of each program the request to participate in this study.. Among the 46 eligible programs, the directors of 28 (60.9%) agreed to participate. We sent the requested number of survey packets, including a cover letter and envelope, to each program director for distribution to possible study participants. When the packets were distributed, potential participants were asked to return the completed questionnaire directly to the principal investigator in an enclosed self-addressed stamped envelope. The return of the completed questionnaire implied informed consent. Anonymity was protected by informing participants in the cover letter not to include any identifying information on the questionnaire or the envelope when returning it.

Ethical approval was given by the Institutional Review Board (IRB) of the Faculty of Medicine, The University of Tokyo in Japan.

Measures

The Japanese version of the “Survey of the Quality of Nursing Doctoral Education” for faculty members and students/graduates was used. The original questionnaire for global quality indicators for doctoral programs in nursing was based on the work of the quality criteria, standards and indicators (QCSI) committee of the International Network for Doctoral Education in Nursing (INDEN), and revised by Kim et al. by a literature review and consultation with international experts (Kim et al. 2006). This questionnaire was translated into Japanese by a Japanese research team, which then discussed the translated questionnaire and revised expressions as necessary. Finally, the original author confirmed the back-translated version, and adjustments were made to make the Japanese version.

The questionnaire had 3 sections that evaluated the quality of doctoral education: those about the program (17 items), faculty (12 items), and resources (9 items). The program section refers to curriculum, scholarship, learning environment, program administration and infrastructure for doctoral education. The faculty section refers to the quality of faculty, including qualifications, teaching, advising, mentoring, practice, service, and diverse roles. The resource section refers to the resources of the university and schools/departments of nursing. In these 3 sections, there are 4 possible responses to each statement: ‘strongly agree’, ‘agree’, ‘disagree’ and ‘strongly disagree’. The questionnaire also had a section evaluating overall quality of the program by the following 3 questions: “How would you rate the overall quality of your doctoral program?”, “How would you rate the overall quality of teaching by faculty in your doctoral program?” and “How would you rate the curriculum of your doctoral program?”. The respondent may select “excellent”, “good”, “fair” and “poor”. In addition, we asked for information on the type of school, respondent’s age, gender, full-time or part-time (for students), current job (for graduates) and job title (for faculty).

Analysis

The Kruskal-Wallis test was used for comparison of responses for each item from students, graduates and faculty. One-way ANOVA was used for age, and the Chi-squared test was used for the type of school and gender. Data were analyzed using SPSS version 17.0 Japanese. Significance level was $p < 0.05$.

RESULTS

Characteristics of participants

From 28 doctoral nursing programs, 127 students out of 304 (41.8%), 24 graduates out of 116 (20.7%), 85 faculty members out of 276 (30.8%) returned valid questionnaires. The type of school was similar among the 3 groups of respondents. Faculty members were significantly older than the other respondent groups, and the rate of females was significantly higher among students and graduates than among faculty members. Among the students, 60% were full-time students. Eighty percent of the graduates were full-time faculty in nursing schools and 80% of the faculty members held the title of full professor. This is shown in Table 1.

Evaluation of program

There were significant differences among the 3 groups of evaluators in responses to 3 of the 17 items evaluating the program. In the analysis, responses of “strongly agree” and “agree” were considered to be affirmative, or positive, while those of “disagree” and “strongly disagree” were considered to be negative. While 79.2% of the graduates responded positively that “the number of faculty was sufficient to facilitate learning”, only 36.1% of faculty members and 49.6% of students made an affirmative response. Also, 78.3% of graduates agreed that “the institution had a well-developed system to foster quality research”, but less than half of faculty members and students responded so. As to the type of courses, 66.3% of faculty members and 58.3% of graduates responded positively to the statement that “a dissertation research seminar and interdisciplinary courses were included”, while only 49.2% of students agreed with the statement and 50.8% gave a negative response. (see table 2).

Evaluation of faculty

Significant differences were noted among groups of evaluators in responses to 5 of the 12 items evaluating the faculty. More than 60% of the receivers (students and graduates) and only 33% of providers (faculty) “strongly agreed” that “faculty members have been certified in nursing specialties and hold membership in professional organizations/societies”, A similar tendency was observed for items about the faculty members’ evidence of scholarship and teaching experience prior to working with doctoral students (more than 50% of the students and graduates “strongly agreed” vs. 21.4% and 35.7% of the faculty members, respectively.) That is to say, students and graduates highly rated faculty members’ abilities while the faculty members assessed themselves as adequate.

Almost 80% of the students agreed positively with the statement that the faculty members had evidence of extramural support, while only about 60% of the faculty and the graduates affirmatively responded to the statement.

More than 40% of the students and graduates responded “strongly agree” to the statement that faculty members demonstrated fulfillment of diverse faculty responsibilities and roles while only 25.3% of faculty members responded “strongly agree”. (Table 3)

Evaluation of resources

Responses to 6 of the 9 items evaluating the resources differed significantly among evaluators.

As to sufficient library holdings and advanced computer facilities, the percentage of “strongly agree” responses was the highest for graduates (66.7% and 54.2%, respectively), followed by students (36.5% and 27.2%, respectively), and faculty members (25.9% and 20.5%, respectively). When positive responses were considered together, a similar tendency was observed for the item on the appropriateness of the research infrastructure: 83.3% of graduates, 59.5% of students and 41.2% of faculty. More than 70% of the students and graduates selected a positive response to the item stating that the school building provided sufficient space for student activities, while only about half of faculty members responded positively. As to the sufficiency of technical and support staff, 50% of graduates and 34.9% of students indicated that it as sufficient, but only 11.8% of faculty members

responded positively.

More than 50% of the students and graduates responded positively to the statement that the school had various sources of funding for student research, but only 36.5% of the faculty members responded positively. These are shown in Table 4.

Overall evaluation

In the overall evaluation, the faculty provided a significantly lower rating for the overall quality of teaching by the faculty in the doctoral program than did students and graduates. As to curriculum, among the 3 groups of evaluators, graduates rated it most highly, although the difference was not significant, while ratings by students and faculty members were almost the same. The evaluation of overall quality did not differ significantly among the groups of evaluators (table 5).

DISCUSSION

Representativeness of the participants

More than 60% of the doctoral programs in nursing in Japan participated in this study and the distribution of the type of school was similar to that national profile so that these participants could be considered representative of those involved in doctoral education in nursing.

Difference among evaluators on items in Program, Faculty, and Resources

Significant differences among evaluators were shown in the greatest number of items related to quality of resources followed by that of the faculty. With regard to evaluation of the program quality, responses to most of the items were similar among the evaluators.

Significant differences among evaluators, particularly between the providers and receivers, in 6 of the 9 items related to resources may show the differences in their roles. Receivers such as students do not deal with the detailed resource needs for offering quality education whereas faculty members are faced with providing the every resource needs for optimal student learning. Hence, it is understandable that receivers perceived resources were there for their education while faculty members perceived otherwise.

Receivers' evaluation that there was sufficient number of faculty members came as a surprise. This may reflect that most of doctoral nursing education in Japan is conducted in faculty advisor's laboratory without having to take too many courses, which would have given them better understanding of the faculty needs. However, this doesn't suggest that faculty's research activities are any less intensive than teaching courses.

The finding that students and graduates perceived the quality of faculty highly positive while faculty members were more negative is similar to that of Korean study (Kim et al, 2010). This may reflect Asian culture that honors and respects teachers. As to the quality of the doctoral program, graduates gave more positive responses to the items on courses and systems to foster research than the other evaluators (students and faculty). Given the fact that the main method of doctoral education in Japan is dissertation research seminars between a professor and a student, and the number of required courses is fewer than other countries, students and faculty who were engaged in current education may judge their courses and the education system as not sufficient. On the other hand, the graduates finished their dissertation successfully, so their evaluation might have been more favorable.

While there were positive evaluations that the programs have research as a goal of the program and a curriculum, and that they were consistent with the mission of the program, the same could not be said about administration systems that could help faculty regularly and appropriately supervise students' progress. Concerns expressed about insufficient information available about careers merit attention by the school and the university.

Differences in responses among the groups of evaluators

Evaluations by the graduates were more positive than those of students. Eighty percent of graduates were working at a nursing school, and many were working at a different nursing school from where they graduated. They might have compared their alma mater to their current workplace with or without realizing it, especially with regard to the items on the program and resources. For example, the reason why most graduates evaluated the number of the faculty as sufficient might be attributed to the shortage of faculty and their own workload in their current workplace. Another

reason for the gap might be that the school they graduated from was comparatively older than the school in which they currently work, which may not have a doctoral program and thus may be lacking the resources and number of faculty members of their previous school.

Graduates gave positive responses to the items on the faculty, which was similar to the students' responses. It might be difficult for students and graduates to consider the entire faculty of the school in their evaluation; instead they may have focused on their own teachers or favorite faculty members. This might be the reason for the highly positive responses to items on the quality of faculty. Another possible reason was that the young graduates were frustrated with seniors at their workplace, because many senior administrative nursing faculty are without doctoral degrees, especially at the newer schools that do not offer doctoral programs in nursing (Turale, 2008). Or it may be that respondents simply might be willing to highly rate the graduate training that they received.

The evaluation of faculty members by students was positive and similar to that of graduates. As to evaluation of the program, the students' evaluation was most negative for the dissertation research seminar and interdisciplinary courses, and it was also negative to the item, "well-developed systems to foster quality research". Given the central role the dissertation research plays in their doctoral education, this negative response merits further exploration. This negative response may reflect students' frustration with the development of dissertation research project itself, which is not uncommon among doctoral students. One should also note that the main vehicle to foster students' quality research is personal communication between tutor/faculty and student in Japan. This means any problem in communication between the two groups would magnify students' negative perception,. Limited number of courses that students take including interdisciplinary courses does not give enough data to provide reasonable explanation. Alternatively, students' ability to make an evaluation about the curriculum or system might have been limited as they were not yet at the end of the program.

Responses by faculty members were the most negative among all evaluators.

Among the items on the program, the response to the statement regarding a sufficient number of faculty to facilitate learning by the faculty evaluators was most negative compared to the

evaluations by students or graduates. Faculty members' direct knowledge of the workload imposed or of vacant positions might have been reflected in this negative evaluation.

However, faculty members' evaluations of faculty were not all negative because the answer "agree" was often chosen. This might have come from Japanese culture which has "self-critical focus" rather than "positive self-regard" (Heine, et al., 1999). The evaluation of faculty by faculty members does not always mean "self-evaluation" only, but it also includes "peer-evaluation". Therefore, Japanese culture cannot explain this situation completely. It is plausible that faculty members assess the situation with a bird's-eye view and judge their ability across the board leading to modest evaluation on the average.

Faculty members' evaluations of the research infrastructure were very negative, especially with regard to items on facilities, space, and technical or support staff. This might be a reflection of their heavy and sometimes unproductive workload. In the U.S, 86.2% of nursing schools have a designated research support office/department/center (Yoon et al., 2002), but such a system is not popular in Japan and the number of support staff per researcher in Japan is the fewest among developed countries (Center Council for Education, 2008).

Responses by faculty members about the sources of funding for student research were also negative and this is in line with the report (Japan Association of Nursing Academies, 2010) that showed insufficient funding for nursing research in Japan. Hence, it was not surprising to find, many faculty members expressing difficulty in finding financial resources for students.

Limitations of the study

In this study, the evaluation was not verified by objective data. Low response rate of graduates is another limitation. Identifying their current contact information posed a biggest challenge. The possibility of bias due to self selection exists because persons with a good impression of their graduate programs might be more likely answer the questionnaire than those who did not, especially graduates.

Implications for the future

The significant differences among the evaluators suggested that evaluations by various types of evaluators are needed for a comprehensive understanding of the quality of doctoral nursing education. This supports the notion that multiple viewpoints are important for a valid evaluation. Gathering objective measures to compare with the subjective measures collected in this study would provide useful guidelines for providing quality nursing doctoral education in Japan. .

CONCLUSIONS

The significant differences among the evaluators suggested a need for having evaluators in various roles for a comprehensive understanding of the quality of doctoral nursing education. Results of this study showed that the evaluation by faculty members as providers tended to be more negative than that by graduates and students who were receivers of education. In addition, evaluation by graduates was more positive than those of students. Areas that need further study include adequate number of faculty and resources for quality nursing doctoral education.

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Reference

- Anderson, C. A., 2000. Current strengths and limitations of doctoral education in nursing: Are we prepared for the future? J Prof Nurs. 16(4), 191-200.
- Berk, R.A., 2009. Using the 360 degrees multisource feedback model to evaluate teaching and professionalism. Medical Teacher 31 (12), 1073-1080.
- Central Council for Education, 2008. Toward the Construction of a Bachelor Course Education.

Retrieved September 27, 2010 from
http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1217067.htm

Dolmans, D. H. J. M., Wolfhagen, H. A. P., Scherpbier, A. J. J. A., 2003. From quality assurance to total quality management: How can quality assurance result in continuous improvement in health professions education? *Education for Health* 16(2), 210-217.

Heine S.J., Lehman D. R., Markus H. R., Kitamura S., 1999. Is there a universal need for positive self-regard? *Psychological Review* 106(4), 766-794.

Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology, 2009. Quality Assurance Framework of Higher Education in Japan. Retrieved September 27, 2010 from http://www.mext.go.jp/english/koutou/__icsFiles/afieldfile/2009/10/09/1284979_1.pdf

Jahangiri, L., Mucciolo, T. W., Choi, M. J., Spielman, A. I., 2008. Assessment of teaching effectiveness in US dental schools and the value of triangulation. *Journal of Dental Education* 72 (6), 707-718.

Japan Association of Nursing Academies, 2010. Actual status of application and adoption for department of nursing in Grant-in-Aid for Scientific Research of Ministry of Education, Culture, Sports, Science and Technology. Retrieved September 27, 2010 from <http://www.jana-office.com/news/20100705.pdf>

Kim, M. J., McKenna, H. P., Ketefian, S., 2006. Global quality criteria, standards, and indicators for doctoral programs in nursing; literature review and guideline development. *International Journal of Nursing Studies* 43(4), 477-489.

Kim, M. J., Lee, H., Kim, H. K., Ahn, Y. H., Kim, E., Yun, S. N., Lee, K. J., 2010. Quality of faculty, students, curriculum and resources for nursing doctoral education in Korea: A focus group study. *International Journal of Nursing Studies* 47, 295-306

Kjellgren, K. I., Welin, C., Danielson, E., 2005. Evaluation of doctoral nursing programs -- a review and a strategy for follow up. *Nurse Education Today* 25 (4), 316-325.

Kogan, J. R., Shea, J. A., 2007. Course evaluation in medical education. *Teaching and Teacher Education* 23 (3), 251-264.

McKenna, H., 2005. Doctoral education: some treasonable thoughts. *International Journal of*

Nursing Studies 42, 245-246.

Mizikaci F. A systems approach to program evaluation model for quality in higher education. 2006.

Quality Assurance in Education 14(1), 37-53.

National Institution for Academic Degrees and University Evaluation, 2009. Standards for Evaluation and Accreditation of Universities 2009-2010. Retrieved September 27, 2010 from http://www.niad.ac.jp/english/pdf/standards2009_niad-ue_e.pdf

Turale, S., Ito, M., Nakao, F., 2008. Issues and challenges in nursing and nursing education in Japan. Nurses Education in Practice 8, 1-4.

Yoon, S. J. L., Wolfe, S., Yucha, C. B., Tsai P., 2002. Research support by doctoral-granting colleges/ schools of nursing. Journal of Professional Nursing 18(1), 16-21.

Table 3. Evaluation of Faculty

	Students (n=127)	Graduates (n=24)	Faculty (n=85)	p
Faculty members meet the requirements of the university for graduate research and doctoral education.				
Strongly Agree	33.1%	25.0%	25.0%	0.453
Agree	55.6%	58.3%	63.1%	
Disagree	8.9%	12.5%	10.7%	
Strongly Disagree	2.4%	4.2%	1.2%	
Faculty members have expertise in the subject area appropriate for student learning.				
Strongly Agree	33.9%	29.2%	20.5%	0.514
Agree	50.8%	58.3%	68.7%	
Disagree	14.5%	12.5%	10.8%	
Strongly Disagree	0.8%	0.0%	0.0%	
Faculty members have evidence of extramural support for their research and for their success in obtaining funding support for their students.				
Strongly Agree	31.5%	41.7%	15.5%	0.013
Agree	48.4%	16.7%	47.6%	
Disagree	15.3%	41.7%	34.5%	
Strongly Disagree	4.8%	0.0%	2.4%	
Faculty members have sufficient evidence of scholarship and have published in peer-reviewed journals.				
Strongly Agree	54.5%	58.3%	21.4%	0.000
Agree	38.2%	33.3%	65.5%	
Disagree	4.1%	8.3%	13.1%	
Strongly Disagree	3.3%	0.0%	0.0%	
Faculty members have teaching experience in nursing education prior to working with doctoral students.				
Strongly Agree	56.8%	50.0%	35.7%	0.009
Agree	39.2%	45.8%	56.0%	
Disagree	4.0%	4.2%	7.1%	
Strongly Disagree	0.0%	0.0%	1.2%	
Faculty members provide students with diverse and challenging learning experiences.				
Strongly Agree	37.1%	33.3%	16.7%	0.220
Agree	39.5%	29.2%	61.9%	
Disagree	15.3%	37.5%	19.0%	
Strongly Disagree	8.1%	0.0%	2.4%	
Faculty members have been certified in nursing specialties and hold membership in professional organizations/societies.				
Strongly Agree	60.8%	66.7%	33.3%	0.000
Agree	32.0%	33.3%	52.4%	
Disagree	6.4%	0.0%	7.1%	
Strongly Disagree	0.8%	0.0%	7.1%	
Faculty members demonstrate fulfillment of diverse faculty responsibilities and roles, including teaching, research, service, and mentoring.				
Strongly Agree	48.4%	41.7%	25.3%	0.048
Agree	38.7%	50.0%	66.3%	
Disagree	11.3%	8.3%	6.0%	
Strongly Disagree	1.6%	0.0%	2.4%	
Faculty members mentor and assist students to understand the value of programs of research and scholarship.				
Strongly Agree	37.6%	50.0%	26.5%	0.166
Agree	42.4%	45.8%	67.5%	
Disagree	16.0%	4.2%	4.8%	
Strongly Disagree	4.0%	0.0%	1.2%	
Faculty members utilize resources within the university and broader community to support program goals.				
Strongly Agree	29.8%	41.7%	22.9%	0.219
Agree	47.6%	50.0%	65.1%	
Disagree	19.4%	8.3%	9.6%	
Strongly Disagree	3.2%	0.0%	2.4%	
Faculty members devote significant time to students' dissertation research.				
Strongly Agree	27.4%	29.2%	18.1%	0.433
Agree	31.5%	29.2%	60.2%	
Disagree	30.6%	33.3%	19.3%	
Strongly Disagree	10.5%	8.3%	2.4%	
Faculty members give timely feedback on students' research.				
Strongly Agree	36.6%	37.5%	27.7%	0.883
Agree	43.1%	50.0%	63.9%	
Disagree	15.4%	8.3%	7.2%	
Strongly Disagree	4.9%	4.2%	1.2%	

Table 1 Characteristics of participants

	Students (n=127)		Graduates (n=24)		Faculty (n=85)		p
Age (years, mean(SD))	38.58	(7.01)	40.27	(5.68)	52.34	(7.43)	0.000
Type of school							
National	80	63.5%	11	45.8%	48	57.8%	0.555
Prefectural and municipal	29	23.0%	9	37.5%	24	28.9%	
Private	17	13.5%	3	12.5%	11	13.3%	
Gender							
Male	9	7.2%	2	8.3%	16	19.5%	0.024
Female	116	92.8%	21	87.5%	66	80.5%	
Type of student							
Part-time student	48	37.8%	-		-		
Full-time student	77	60.6%	-		-		
NA	2	1.6%	-		-		
Type and status of current job							
Full-time faculty in nursing school	-		19	79.2%	-		
Full-time nurse in hospital	-		2	8.3%	-		
Others	-		2	8.3%	-		
Part-time faculty in nursing school	-		1	4.2%	-		
Current position							
Professor	-		-		70	82.4%	
Associate professor	-		-		6	7.1%	
Assistant professor	-		-		5	5.9%	
NA	-		-		4	4.7%	

Table 2. Evaluation of Program

	Student (n=127)	Graduate (n=24)	Faculty (n=85)	p
The importance of research is clearly stated as a goal of the doctoral program by both the university and the school of nursing.				
Strongly Agree	34.6%	43.5%	43.5%	0.326
Agree	56.7%	56.5%	48.2%	
Disagree	6.3%	0.0%	8.2%	
Strongly Disagree	2.4%	0.0%	0.0%	
Your institution values, supports, and provides rewards to students for their research and scholarly activities.				
Strongly Agree	15.9%	20.8%	11.9%	0.611
Agree	36.5%	37.5%	39.3%	
Disagree	34.1%	37.5%	40.5%	
Strongly Disagree	13.5%	4.2%	8.3%	
Your institution has a well-developed system to foster quality research				
Strongly Agree	9.4%	8.7%	7.1%	0.043
Agree	35.4%	69.6%	40.0%	
Disagree	46.5%	17.4%	43.5%	
Strongly Disagree	8.7%	4.3%	9.4%	
Emphasis of the curriculum is consistent with the mission of the university and the discipline of nursing.				
Strongly Agree	26.2%	37.5%	21.4%	0.433
Agree	54.0%	50.0%	67.9%	
Disagree	16.7%	8.3%	10.7%	
Strongly Disagree	3.2%	4.2%	0.0%	
There is a clear emphasis on nursing science and research training in the curriculum.				
Strongly Agree	20.5%	37.5%	25.0%	0.085
Agree	44.9%	45.8%	46.4%	
Disagree	30.7%	16.7%	25.0%	
Strongly Disagree	3.9%	0.0%	3.6%	
Faculty research expertise areas are presented in the curriculum.				
Strongly Agree	28.8%	25.0%	25.3%	0.957
Agree	45.6%	54.2%	55.4%	
Disagree	22.4%	20.8%	18.1%	
Strongly Disagree	3.2%	0.0%	1.2%	
Curriculum includes core courses appropriate for a doctoral degree in nursing.				
Strongly Agree	11.0%	33.3%	13.3%	0.175
Agree	40.2%	25.0%	43.4%	
Disagree	39.4%	41.7%	36.1%	
Strongly Disagree	9.4%	0.0%	7.2%	
All students receive formal training in ethics and the protection of human/animal subjects in research.				
Strongly Agree	9.6%	29.2%	9.6%	0.092
Agree	35.2%	29.2%	48.2%	
Disagree	44.8%	33.3%	36.1%	
Strongly Disagree	10.4%	8.3%	6.0%	
Course descriptions are written and available to students and faculty in detail.				
Strongly Agree	15.1%	16.7%	9.5%	0.974
Agree	50.8%	50.0%	57.1%	
Disagree	25.4%	25.0%	31.0%	
Strongly Disagree	8.7%	8.3%	2.4%	
Types of courses include dissertation research seminars and interdisciplinary courses in addition to seminars.				
Strongly Agree	11.9%	25.0%	12.0%	0.040
Agree	37.3%	33.3%	54.2%	
Disagree	39.7%	41.7%	31.3%	
Strongly Disagree	11.1%	0.0%	2.4%	
The environment is supportive of students' learning.				
Strongly Agree	18.3%	37.5%	20.2%	0.110
Agree	48.4%	41.7%	53.6%	
Disagree	27.8%	20.8%	21.4%	
Strongly Disagree	5.6%	0.0%	4.8%	
The program has a process in place that fosters socialization of students to doctoral education and facilitates interaction among students and between faculty and students.				
Strongly Agree	15.1%	8.7%	7.4%	0.722
Agree	42.9%	60.9%	59.3%	
Disagree	33.3%	30.4%	28.4%	
Strongly Disagree	8.7%	0.0%	4.9%	
There are sufficient numbers of faculty members to facilitate learning.				
Strongly Agree	8.7%	20.8%	7.2%	0.000
Agree	40.9%	58.3%	28.9%	
Disagree	39.4%	20.8%	45.8%	
Strongly Disagree	11.0%	0.0%	18.1%	
There are administration systems in place to ensure that faculty carry out regular and appropriate supervision of the students' progress.				
Strongly Agree	10.3%	4.2%	1.2%	0.493
Agree	28.6%	37.5%	28.6%	
Disagree	43.7%	50.0%	58.3%	
Strongly Disagree	17.5%	8.3%	11.9%	
Sufficient materials and information are available for students.				
Strongly Agree	11.1%	12.5%	3.6%	0.403
Agree	49.2%	50.0%	51.2%	
Disagree	28.6%	33.3%	35.7%	
Strongly Disagree	11.1%	4.2%	9.5%	
Sufficient information about careers is available.				
Strongly Agree	6.3%	8.7%	4.9%	0.103
Agree	33.3%	47.8%	42.7%	
Disagree	44.4%	39.1%	47.6%	
Strongly Disagree	15.9%	4.3%	4.9%	

	Student (n=127)	Graduate (n=24)	Faculty (n=85)	p
Faculty members provide recommendation letters when needed and seek job opportunities for students.				
Strongly Agree	32.3%	33.3%	26.2%	0.981
Agree	49.2%	45.8%	60.7%	
Disagree	16.9%	20.8%	10.7%	
Strongly Disagree	1.6%	0.0%	2.4%	

Table 4. Evaluation of Resources

	Students (n=127)	Graduates (n=24)	Faculty (n=85)	p
Number of technical and support staff is sufficient to support doctoral students.				
Strongly Agree	8.7%	8.3%	1.2%	0.000
Agree	26.2%	41.7%	10.6%	
Disagree	48.4%	33.3%	62.4%	
Strongly Disagree	16.7%	16.7%	25.9%	
Research infrastructure is appropriate for facilitating research and education.				
Strongly Agree	15.9%	25.0%	4.7%	0.000
Agree	43.7%	58.3%	36.5%	
Disagree	34.9%	12.5%	45.9%	
Strongly Disagree	5.6%	4.2%	12.9%	
Advanced computing facilities with Internet access are in place.				
Strongly Agree	27.2%	54.2%	20.5%	0.027
Agree	52.8%	33.3%	61.4%	
Disagree	14.4%	12.5%	13.3%	
Strongly Disagree	5.6%	0.0%	4.8%	
Advanced information technology is available for research and education at off-sites, if				
Strongly Agree	13.6%	16.7%	13.1%	0.868
Agree	38.4%	41.7%	46.4%	
Disagree	36.8%	29.2%	23.8%	
Strongly Disagree	11.2%	12.5%	16.7%	
Library has sufficient holdings, search engines, and databases.				
Strongly Agree	36.5%	66.7%	25.9%	0.000
Agree	49.2%	29.2%	48.2%	
Disagree	11.1%	4.2%	20.0%	
Strongly Disagree	3.2%	0.0%	5.9%	
School building provides sufficient space for student activities.				
Strongly Agree	27.8%	33.3%	15.3%	0.002
Agree	46.8%	41.7%	36.5%	
Disagree	19.8%	25.0%	40.0%	
Strongly Disagree	5.6%	0.0%	8.2%	
School is equipped with sufficient resources for teaching and research.				
Strongly Agree	23.0%	29.2%	16.5%	0.154
Agree	48.4%	54.2%	48.2%	
Disagree	21.4%	12.5%	29.4%	
Strongly Disagree	7.1%	4.2%	5.9%	
School has relevant and ancillary facilities for education, training and research.				
Strongly Agree	27.0%	29.2%	16.7%	0.242
Agree	46.8%	45.8%	51.2%	
Disagree	18.3%	20.8%	23.8%	
Strongly Disagree	7.9%	4.2%	8.3%	
The school has various sources of funding for student research.				
Strongly Agree	12.1%	16.7%	10.6%	0.047
Agree	43.5%	45.8%	25.9%	
Disagree	32.3%	25.0%	48.2%	
Strongly Disagree	12.1%	12.5%	15.3%	

Table 5. Overall evaluation

	Students (n=127)	Graduates (n=24)	Faculty (n=85)	p
How would you rate the curriculum of your doctoral program?				
Excellent	8.0%	13.0%	8.3%	0.055
Good	24.8%	43.5%	28.6%	
Fair	51.2%	39.1%	50.0%	
Poor	16.0%	4.3%	13.1%	
How would you rate the overall quality of teaching by faculty in your doctoral				
Excellent	30.4%	34.8%	8.2%	0.000
Good	31.2%	39.1%	23.5%	
Fair	26.4%	17.4%	55.3%	
Poor	12.0%	8.7%	12.9%	
How would you rate the overall quality of your doctoral program?				
Excellent	12.2%	13.0%	9.8%	0.140
Good	33.0%	39.1%	23.2%	
Fair	42.6%	43.5%	52.4%	
Poor	12.2%	4.3%	14.6%	