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RESEARCH ARTICLE

DEVELOPMENT AND EXPERIMENTAL RESULTS OF OUTCOMES-BASED NURSING PROGRAM

Odonjil P.

School of Nursing of National University of Medical Sciences.

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Abstract

Introduction: Develop the history of nursing education, bachelor's degree of professional competence and develop a training curriculum based on the existing nurses professional competency assessment.

Research method: For the nurses involved in the survey used randomized descriptive survey methodology, problems faced, nursing knowledge, skills and attitudes. In conducting the survey, we used questionnaires, interviews, observations, documentation and test methods. Nurses knowledge, skills and attitudes are evaluated based on the nurses definition of the 2012 Ministry of Health and a standard questionnaire for Lickert used for quantitative.

Result: Nurse training curriculum of seek evaluate ways to continually assess. The results of the survey are based on a comprehensive competency-based curriculum, training quality has been met by organizing training of learners' needs. The study shows that there is a need to improve outcome based curriculum and to supplement some content. The average rating of students in the study group (90.06 + - 3.34) in the study sample was relatively high (78.38 + -4.85), which contributed to the improvement in the quality of the training, which is an updated version of the comprehensive curriculum and it is possible to introduce similar professional schools.

Conclusion: It is important to note that our innovative comprehensive competency-based curriculum offers the opportunity to meet the needs of today's curriculum, to facilitate inter-curricular activities, to public health-oriented, student-centered, problem-based, self-taught knowledge and the ability to evaluate the student's theoretical and practical abilities.

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Introduction:-

Updating, improving and creatively implementing the bachelor's nurse training program provides an opportunity to bring the quality of nursing care closer to the international level and for cooperation. It is observed that there is a lack of both evaluation to the current state of nursing care and research on how comprehensive nursing competencies are reflected in the curriculum of schools that train nurses, which are needed for the development of comprehensive nursing professional competencies that reflect the trends of modern nursing care and meet the health needs of the population, and also no decision-making is based on research. Therefore, the basis of this research is a societal need to study the above problem, give a specific conclusion on the current situation, develop the comprehensive competence of the nurse profession and update the curriculum based on it.

Corresponding Author:- Odonjil P.

Address:- School of Nursing of National University of Medical Sciences.

Research status of the subject:

Mongolia has a history of more than 90 years, but there are few research works on nursing science, nursing education, nursing students and nurses' knowledge, abilities, and attitudes. Researchers and scientists in the fields of medical education, development of nursing education and training evaluation, namely, Y. Volodya (2000), S. Naranchimeg (2002), D. Amarsaikhan (2003), N. Sumberzul (2003), M. Nyamsuren (2006), L. Avirmed (2007), D. Otgonbayar (2010), B. Oyungoo, (2010) E. Oyunsuren (2012), D. Solongo (2012), S. Oyuntsetseg (2015), and P. Tuul (2011) have significantly contributed to the scientific development of Mongolian Medical and Nursing education.

Research Methodology:-

One moment descriptive research model was used for the status of assistance provided by the nurses, the problems they face, the knowledge, skills, and attitudes of nurses among the participant-nurses. When conducting the research, questionnaire, interview, observation, document study, comparison and testing methods were utilized.

Evaluation of the knowledge, skills and attitudes of nurses was based on the professional definition of nurses approved by the Ministry of Health in 2012, a standard questionnaire with a Likert scale was used for quantitative research, and for qualitative research, interview, observation, document study, comparison and experimental research were conducted.

Through evidence based research, the Ministry of Education's 2012 bachelor's training standards for nursing, as developed nations' nursing example, Nursing University of Vermont (College of Nursing University of Vermont), Korea's Yonsei University College of Nursing (Yonsei University College of Nursing), Japan's National School of Nursing (National College of Nursing), Sydney University of Nursing, University of Notre Dame in Perve, Western Australia, Philippine School of Nursing, and International Ulaanbaatar University's nursing training programs were studied in comparison with the curriculum of the School of Nursing of National University of Medical Sciences.

Research findings:

The following policy documents were used as a basis to develop the version of the bachelor's nurse training curriculum. It includes:

1. Comprehensive Nursing Competencies
2. Nursing Development Policy (Health Minister's Order No. 223 of 2005)
3. Nursing professional development model (Health Minister's Order No. 168 of May 14 2012, appendix 8)
4. A comparative study of the core content of nursing training

The result-based training content aims at correctly defining the boundaries between healthy and pathological conditions, assessing the health level and physical condition of patients and clients, providing nursing care to healthy and sick people, as well as teaching healthy lifestyles, providing health education, improving the quality of life of the population and preventing diseases.

There are differences in the training program for preparing nurses with a bachelor's degree at the School of Nursing of National University of Medical Sciences compared to the training programs of other foreign countries.

Table 1:- Comparison of curriculum structures to train a nurse specialist with a bachelor's degree.

Parameters	School of Nursing of National University of Medical Sciences	Ulaanbaatar International University	Yonsei University of Korea	Japan National University of Nursing	University of Vermont, USA
Purpose	Diseases are well covered, and nursing care is insufficient, the 5 levels of nursing are well	The 5 hierarchy of nursing activities is well covered, but more about diseases and	The content of training on healthy lifestyles aimed at preventing illness is well	The content is covered based on social and student needs.	The content of health education for the population aimed at public health is more

	covered	pathology	covered.		covered
Allocated credit hours	142	124	126	128	131
Theory and practice ratio	1:1,8	1:1,8	1:2,5	1:2,5	1:2,8
Main content selection	Determining the boundaries between healthy and pathological conditions and assessing the client's health are inadequate.	The boundaries between healthy and pathological conditions are not clearly defined.	Determining the boundaries between healthy and pathological conditions and assessment of physical condition are well covered.	The client's health assessment and identification of health needs are well covered.	Identifying the health needs of the client and the health condition assessment are well covered.
Course format	Theory Practice Seminar	Theory Practice Seminar	Theory Practice Seminar	Theory Practice	Theory Practice
Textbook sufficiency	Insufficient	Insufficient	Sufficient With options	Sufficient With options	Sufficient With options
Evaluation	Teacher assessment	Teacher assessment	3rd party and self-assessment	3rd party and self-assessment	Collaborative assessment

Clinical practice hours are relatively limited in the undergraduate curriculum.

The ratio of theoretical and practical courses, denominations and set hours were different. Also, it can be seen that the number of elective courses is limited, the course selection activities of students are not clear, and self-study and knowledge creation activities are insufficient.

When comparing the curriculum structure of foreign and domestic schools, the structure is basically similar, but in our country, diseases are more reflected in the curriculum than nursing and counseling that meet the needs of clients, assessing their health level, providing health education, and training in healthy lifestyles and other disadvantages are less time for students self-study insufficient study textbooks and manuals, and lack of options.

Table 2:- The content of the course is included in the curriculum.

Courses that are studied only on our country	Content with limited coverage	Content not covered
Physical education Physics	The concept of health Evaluating a healthy person Advice for a healthy person Pathological anatomy Pathophysiology Teamwork Communication skills	Nursing Care Framework (Nursing Domain)

For instance, physical education and physics are not found in the curriculum of other countries, but in the curriculum of our country.

Subjects covered in the curriculum with relatively little content include:

- The concept of health, evaluating a healthy person, giving advice to a healthy person, defining the boundaries between healthy and unhealthy, etc.

Subjects that need to be added to the curriculum based on need:

- There are courses such as communication skills, thinking, decision-making and teamwork skills, Mongolian language composition, and medical practice, and the study shows the understanding of the Nursing domain, which is

a category of nursing care services, is not included in the content of the courses of the Nursing School of University of Medical Sciences, in comparison with other schools.

The above study shows that there is an urgent need to include some theoretical courses that must be studied in the undergraduate nursing program.

A comparison of the content of the nursing curriculum at the Sydney University of Nursing, the University of Notre Dame in Perth, Western Australia and the Philippine School of Nursing shows the following differences. For example: for the University of Sydney, 1 hour of nursing program content is equivalent to 10 hours of study. However, 1 credit hour at the University of Notre Dame in Perth, Western Australia varies depending on the state and university, and in most cases, 1 credit hour is equal to 10 hours of study time, and 1 credit hour in the United States is 15 hours of study time, and the Philippines Nursing 1 credit hour is equal to 16 hours of training for the school's curriculum and School of Nursing of University of Medical Sciences. (The teacher will work 2 hours to deliver 1 hour of information. The student will work 48 hours in 16 weeks to learn) 800 hours of clinical practice at the nursing school curriculum in Australia, 536 hours of clinical practice at the nursing school curriculum in the Philippines, and clinical practice at the nursing school curriculum in Mongolia with 352 hours of content, it makes a significant difference. According to this, it is necessary to increase the hours of clinical practice classes and update the content of the training.

Table 3:- View of the curriculum of the School of Nursing of ASU conceptual differences

Parameter	Traditional curriculum	New program design
Concept	Basic diseases treatment-oriented dual-professional program for junior doctors	In addition to providing nursing care, it also focuses on public health
Activity	Separated	Integrated (Teacher development, student development, program development, learning environment)
Training technology	A standard model Only in stereotyped form Hospital based Teacher-centered Information based Apprenticeship training	Multiform design Public health oriented Student-centered Problem-based Self-study
Student evaluation	Oral examination Written examination Patient-based examination	Oral examination Self-study Multiple option test OSCE OSPE Mini CEX DOPS 360 degrees
Coherence of content and lessons	All levels included Excessive duplication of program content Poor interrelation of lessons	Content for every level Duplicate content removed Good coherence of lessons
Expected results from training	Nursing care is provided	A nurse is a professional, team worker, organizer, decision maker, leader, mentor, researcher, and health advocate.

Table 4:- Comparison of learning outcomes of experimental and control groups.

Group	Control group (n = 31)	Experimental group (n = 42)	t/ χ^2	P
Age (\pm s)	22.80 \pm 0.95	23.21 \pm 0.81	0.30	0.052
Admission score (\pm s)	558.26 \pm 21.75	562.45 \pm 31.62	0.65	0.527
Gender (n, %)				
Male	2 (6.5)	4 (9.5)	0.02	0.967
Female	29 (93.5)	38 (90.5)		
Home residence (n, %)	26 (83.9)	31 (73.8)	1.05	0.304
City				
Countryside	5 (16.1)	11 (26.2)		

There was no difference between the two groups in the mean scores for the assessment of theoretical knowledge of nursing. As a result of the clinical evaluation aimed at evaluating the students' clinical thinking, understanding, and adaptability, the average score of the experimental group was relatively higher than that of the control group. In other words: the experimental group had relatively higher health assessment, data collection, communication and skill indicators than the control group ($p < 0.05$).

Table 5:- Training between experimental and control groups comparison of teaching methods.

Group	Control group (n = 31)	Experimental group (n = 42)	T	P
Comprehensive theory of knowledge	76.08 \pm 4.69	77.97 \pm 6.31	1.408	0.160
Health Information Collection	92.48 \pm 3.49	88.72 \pm 7.11	2.699	0.009
Actual exam	93.54 \pm 3.40	83.94 \pm 7.04	7.006	0.001
Medical record	92.48 \pm 3.49	92.14 \pm 2.44	0.478	0.634
Work in a simulated environment	91.83 \pm 2.15	90.21 \pm 3.86	2.106	0.039
Unique nursing procedure	94.09 \pm 2.69	93.69 \pm 3.43	0.536	0.594
Basic nursing procedure	92.87 \pm 3.39	91.54 \pm 5.14	1.257	0.213
Communication skills	91.50 \pm 3.12	89.88 \pm 3.54	2.033	0.046

Nursing education is a skill based on the practical application of clinical skills, and the goal of nursing education is to prepare comprehensively competent nurses with advanced clinical nursing knowledge and skills. New comprehensive competence or new educational training is the integrated content of comprehensive education to improve knowledge and skills, and the standard education system with comprehensive competence in nursing has completely changed the traditional teaching method.

In terms of program changes: In addition to the teaching staff, a program development team was formed in cooperation with the professional nurse trainers working in the hospital.

There was a lot of content overlap with specialized nursing courses such as pediatric nursing, maternal nursing, adult nursing, and surgical nursing, but there was no subject overlap.

The results of the research show that by implementing a revised version of the nursing curriculum and organizing training that meets the needs of students, there has been a clear improvement in the quality of training. For example:

Table 6:- Interrelationship of student knowledge, ability and attitude.

parameter	Mean	±SD	95% Mean	Confidence Interval for	ANOVAPP- value	Tukey HSD
			Lower Bound	Upper Bound		
Knowledge	77.87	±5.18	75.11	80.63		
Ability	88.75	±4.76	86.20	91.29	0.0001	M<Ч,X
Attitude	86.62	±4.82	84.05	89.19		
Total	84.41	±6.77	82.44	86.38		

The average of the students who participated in the study is (77.87±5.18), which is statistically significantly different ($p=0.0001<0.05$) than the average of the ability (88.75±4.76) and attitude (86.62±6.77), or the knowledge is low (POST HOC TEST TukeyHSD), while the means for ability and attitude ratings did not differ.

The average of the study evaluation of students in the experimental group (90.06±3.34) was relatively higher than that of the control group (78.38±4.85), which has a good effect on the quality of education. ($p<0.03$)

Conclusion:-

The updated version of the result-based curriculum that we have developed has the advantages of meeting the current social needs of education, providing inter-curricular coordination, focusing on public health, student-centered, problem-based independent learning, knowledge creation, and objective assessment of students.

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