Professors' view on the appropriate postgraduate degree in nursing education: A comparative study in two different sociocultural societies and literature review

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Abstract

Generally, studying and taking license in doctorate of nursing should be according to the society's requirement for better applying of that doctorate degree. In this line, selecting appropriate doctorate program is one the most challenges for any nurses that fulfill the different professional need of nursing disciplinary in academic and clinical settings. The purposes of present study were comparison of the PhD and DNP programs aims and determining appropriate doctoral program from the American and Iranian professor's perspective according to the academic and clinical contexts. The design of study was a review and an internet-based cross-sectional research. Selected governmental Universities in all over the Iran and the United States (presenting DNP program) were settings of study. The participants of study were lectures with the academic position higher than instructor (Assistant professor = 32, Associate professor = 22, and Professor = 5). According to the first purpose, all of American's professors were compared and declared clearly but the majority of Iranian's professors weren't differentiated between the purposes and were explained their responses in the uncertainty halo. However, curriculum compatible with the interests and goals, increase in intellectual knowledge, career advancement, primary care clinical practice, and nursing education were described as the final purposes of PhD and DNP programs. About the second purpose, new PhD curriculum was developed according to the academic and clinical contexts with two sections: theoretical (24 credits) and clinical (22 credits) courses. The evolution of such new doctoral program in nursing especially in the developing countries, due to their limitations, deficiencies, and even lacks of resources, needs a multi and interdisciplinary partnership and cooperation to ameliorate bridges and reducing barriers; because of the majority of doctoral courses have dynamic nature and for that, need to modify and reconsider continuously. Furthermore, for better managing the new and sometimes challenging situations, such partnership and cooperation are so necessary.

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1. Introduction

Postgraduate education for nurses initially commenced at the Teachers College of Colombia University in the United States in the early 1920s and evolution over time [1]. In the USA, the significance of postgraduate level education for nurses pursuing advanced roles appeared in the early 1970s and continues the focus in most contemporary Master's and PhD's (Doctor of Philosophy) degree programmes in nursing. Nurses also take on postgraduate degrees to authorize them to practice at advanced educational, managerial or clinical levels in order to meet changing demands in the healthcare system [2, 3]. Other Purposes of postgraduate education are achieve the enhancement and development of career or promotional prospects, the ability to increase earning potential, the need to acquire advanced professional and research capabilities or the desire to change career [2, 4]. Nurses also emerge to be moving towards continuing education as a means of achieving personal and professional identification and development

and also empirical evidence also elucidated that completing a degree not only influences on the career one chooses but also on development within that career [2]. It is characterized that continued education for nurses positively impacts practice but conclusive proof that this directly impacts patient care is difficult to approved. Currently the challenge in nurse education is to make programmes convenient, accessible and attractive to a wider cohort of students [5].

To date, two general doctoral programs are so common in nursing major and the majority of potential candidates in postgraduate level attempt to enter one of the aforesaid programs. These two general doctoral programs are PhD and DNP (Doctor of Nursing Practice) degrees. The PhD in nursing program suggests a research-intensive curriculum to ready nurse-investigators who are prepare to commence to perform research on nursing problems, outcomes and health policy independently and as leaders of interdisciplinary teams. Graduates of the PhD Program will

have the envisage skills necessary to develop clinical nursing knowledge through creativity, innovation and discovery. They will be instructed in health policy principles to work collaboratively with other professionals and advocacy groups to ameliorate the health care system. Specifically, nurse-scientist graduates will be ready to commence to: 1- design, conduct, direct and report research studies that increase knowledge about the outcomes of nursing and other clinical practice; 2- translate the evidence accumulated through research into practice; and 3- extended and accomplish innovative and informed health policies for ameliorated organization and delivery of health services. The PhD courses are in three major clusters: theoretical foundations of nursing science; analytical foundations of nursing science; and finally elective and application courses closely mentored by faculty through which the student extends specialized research expertise [6-8].

Another doctoral program is DNP. The DNP program suggests a clinically focused curriculum to ready expert practitioners. The degree demonstrates the highest academic preparation in clinical nursing. Graduates of the DNP program will be advanced practice nurses with the knowledge and skills for fully responsible expert care to patients across all care settings. The clinical doctorate can be conferred in conjunction with any specialty in advanced nursing practice. The DNP graduate has the critical decision-making knowledge and clinical skills for the: identification of and treatment interventions for the diagnostic complexities of acute and chronic illnesses and their comorbidities; elaborated and sophisticated use of informatics and decision-making technology; elaborated and sophisticated application of biological, psychological and social science principles to health care practice; and finally provision of fully accountable, high quality, comprehensive care in all settings. The DNP program includes: 1- 30 credits of science underpinning practice; 2- a year of full-time residency (10 credits), and finally the completion of a scholarly portfolio of complex case studies, scholarly papers and published articles [6-10].

According to the definition, there are several similarities and differences between DNP and PhD programs. From similarities, graduates of the two different doctoral programs both take part in active scholarship, comprising the scholarship of discovery; the integration and application of new knowledge to clinical practice and health policy, and the scholarship of teaching. In both programs, there are accentuating on the development of skills necessary to supply leadership to the nursing profession and to the greater health sciences community as developers and translators of "evidence-based" practices. Students from both programs come together in coursework on ethical theory and decision-making, research methodologies, and

translating research to practice and policy. Both types of graduates are ready to accomplish as nursing educators in research-intensive universities or other academic settings with advanced degree programs. But from other view, the PhD degree is a research doctorate that needs a dissertation and that prepares graduates to function as beginning nurse-investigators and scholars, with the goal of building a program of research as independent nurse-scientists involved in the discovery and refinement of nursing knowledge, while the DNP degree is a clinical doctorate that prepares the graduate to practice independently with the most complex patients, in any setting, applying complicated informatics and evidence-based decision-making skills. The degree needs a DNP portfolio that is of equal detail and compelling evidence as a research dissertation. The DNP is the highest degree for nurse-clinicians and prepares them to practice fully responsible care for patients across settings and over time [6-10].

1.1 History of nursing degrees in Iran

In the past, nursing in Iran was strongly influenced by the British nursing tradition, characterized by the apprenticeship style of nurse education. About 25 years ago, nurses began to be educated in institutions of higher education (Table 1).

This change was announced as an opportunity to improve the professional status of nurses in Iran. At present, university-based programs comprise the Bachelor of Science (BS) in nursing, the master's (MS) degree, and the PhD [11].

1.1.1 The Bachelor of Science Program

This degree is the basic nursing program at the academic level. Successful graduation from the BS program leads to the Bachelor of Nursing degree and granted RN status, which is the lowest legal and educational prerequisites for professional nursing in hospital. The purpose of this program is to cultivate expert nurses with the mandatory and minimum level of theoretical knowledge and practical skills to deliver nursing care at the highest level of patient's safety, security and quality of care. In this regards, the majority of educational researches in students have applied on this group so that the findings of researches are available in different domains of different areas of the BS subjects [12-15]. This program was constituted from four educational and practical intensive years that forms the backbone of formal nursing education with at least 130-credit [16,17]. Educational settings across the training period are shared among college, hospitals, community and other educational settingsc [19-21]. The BS program was constituted from three-categorization of subjects that are: basic, general, and specific subjects [22-24]. This degree terminated by a full-time internship period in the final year of the curriculum.

Table 1. Major Changes in Nursing Education in Iran

1979	**Transfer of nursing programs from hospitals to higher education**
1986	Development of the BS degree in nursing
1988	Development of the MS degree in nursing
1992	First PhD in nursing program
1999	Universities that offer the PhD increased from one to five
2000	Beginning of the fellowship programs in nursing (elderly, oncology, intensive care, …)

2004	Beginning of the specialized master degrees including neonatal intensive care unit (NICU), adult ICU (AICU), psychiatric ICU (PICU), …

1.1.2 The Master of Science Program

The purpose of cultivate and accept master student in nursing is to nurture and improve knowledge and skill levels of graduated registered nurse from the BS degree. For the MS program entry, there are several prerequisites such as: having the BS degree from acceptable internal or external universities with minimum grade point average (GPA) 15/20, having at least two or three years of relevant work experience, taking the minimum acceptable score in the entrance exam (correctly answered 80% of questions of the 100% questions), having acceptable score in the English exam (correctly answered 50% of questions of the 100% questions). According to the student's scores, accepted university will be announced. The MS program has 4 to 6 semesters and 30 to 44 required and optional credits, were presented depends on the policy of accepted university . The majority content of presented credits is correlated to the theoretical knowledge, research and statistical analysis, and finally with less frequency clinical and practical courses. Seminar (research on the nursing problems and challenges) and dissertation credits offered, usually in the second and third semesters of study, respectively. It is so important that the most motivated interests in studying the MS degree is financial matters and escape from the clinical and patient's bedside environment to the academic and educational atmosphere. In other words, employment in an academic setting, in comparison to clinical setting, has more financial benefits in Iran; therefore, many Master of Nursing graduates prefer to pursue careers in the academe rather than clinical sector, in contrast to western countries [25]. Master of Nursing graduates include the majority of nursing school faculties, and many new graduates work in clinical areas only because the academic positions have been completed by ex-graduates. Despite the fact, many nursing managers assert that the current focus on educational courses in Master of Nursing programs rarely prepares a person to be a good clinician. The authors strongly make a belief that this matter can be one of the most challenges between educational and clinical settings. In our experiences, one of the most clinical challenges with the new graduated students in the master's level is clinical patient education [26, 27].

1.1.3. The Doctor of Philosophy program

This program is 4.5 years in length and involves in 45 credits, including 20 credits for dissertation. The purpose of the doctoral program is to prepare graduates for a lifetime of rational and brilliant inquiry and creative scholarship and research, and to further the extension of nursing knowledge in Iran. Graduates from the programs are anticipated to be knowledgeable professionals who are able to provide valuable insights into nursing issues, thereby ameliorating the nursing care status in the health care system. But in reality, due to improper management, planning and scheduling of programs, we are encountered other matters except predesigned purposes. As the evidence of this claim, from the beginning of the program, this program approved by the Ministry of Health & Medical Education (MoHME) as a blend of the United States (US) and United Kingdom

(UK) models without considering the real Iranian's educational, practical, and clinical context and culture. The students accepted into the doctoral program are Master of Nursing graduates who have been successful in both an annual competitive nationwide examination (developed by MoHME) and an interview with a panel of nursing experts (members of the nursing board). In this program, the majority of courses merely are theoretically correlated to the research, education, and nursing theories and practical aspects of these matters are very limited or are artificial in its nature. The program has two sections: course-based and research-based. In the course-based section, the presented curriculum is based on the original one in the year 1992 and the majority of syllables are archaic and ancient because of the health and related matters are so dynamic and context-based issues and highly need revision and reconsideration to minimize the most important gap between theoretical deadlines and topics to the real needs of different members of their communities. This is done while, the majority of courses in course-based section, are highly abstracted and need more and more simplification to find usability. In the second-section, there is a high pressure load on the students for publishing at least three English articles which should be indexed in institute for scientific information (ISI) databases. In this situation, not only new practical and clinical information and skills will not be added to students, but also because of the nature of mere theoretical and educational of the program, the student's previous clinical and practical information and skills will be forgotten. Furthermore, after graduation, new graduated students in the PhD's level with academic degree of assistant professor are like new graduated nurses in the bachelor's level that need more and more practicing for remembering their forgotten practical and clinical information and skills. It should be added that recent doctoral graduates are completely different from bachelor's level from perspective of cover the clinical and practical courses in hospitals because of they think are in the very high level and this kinds of courses are so low class for them. In Iran, most common postgraduate degree in nursing is PhD. But recently, DNP has been a hot topic and in many cases, interferes with the necessity of PhD degree. This matter is to some extent that nursing board has shown positive interest in this regard gradually, but the important matter is, the correct definition of new program (DNP) is completely ambiguous and situations of colleges, hospitals and other significant fields aren't prepared from different perspectives including curriculum, trained professors, physical environments in colleges and hospitals, agreements with hospitals' authorities, position definition during and after program [28-30].

1.2 Objectives

The present study had two purposes: 1- Comparison of the PhD and DNP programs purposes; and 2- determining appropriate doctoral program from the American and Iranian professor's perspective according to the academic and clinical contexts. The main study question was what is

appropriate doctoral program according to the academic and clinical context?

2. Methods

2.1. Study Design

The design of study was a review and an internet-based cross-sectional research.

2.2. Ethical considerations

The research is primarily defined as the doctoral practice and the proposal of that was approved by Baqiyatallah University of Medical Sciences, Nursing Faculty. The ethical considerations were related to the participants' autonomy, confidentiality, and anonymity during the study period and study's publication. The participants were informed of the aim, the design of the study, and the voluntary nature of their participation.

2.3. Sampling and Setting

A two-stage cluster random sampling was selected as random strategy in Iran and for USA universities; convenience sampling was selected as sampling strategy. The reason of different sampling strategies was the nationality of authors that it was likely that with previous sampling strategy, the useful returned questionnaires become very low rate. In Iran, the procedure of sampling conducted as follow: First-phase, geographically, all of universities of medical sciences in Iran equally divided into five categories as Central part, North, South, East, and West. Second-phase, in each part, two universities were chosen through cluster random sampling by replacing (ten universities). For taking emails of selected universities professors, their academic and non-academic emails were achieved by Yahoo Group (all of professors' emails registered in this group and all of the PhD students can easily access to that). For each university, eight questionnaires were sent (n=80). The study had two inclusion criteria: the satisfaction of participants and their academic degree (Assistant professor, Associate professor, and professor). It should be noted that PhD students in last semester were considered as assistant professor. In the different USA universities, first of all, Universities of Medical Sciences that offer DNP and PhD were selected [9, 10]. With considering the inclusion criteria, 200 questionnaires were sent. In this study, respond to the questionnaire was considered as implied consent. All parts of this study were reviewed according to the strengthening the reporting of observational studies in epidemiology (STROBE) statement (Figure 1) [31].
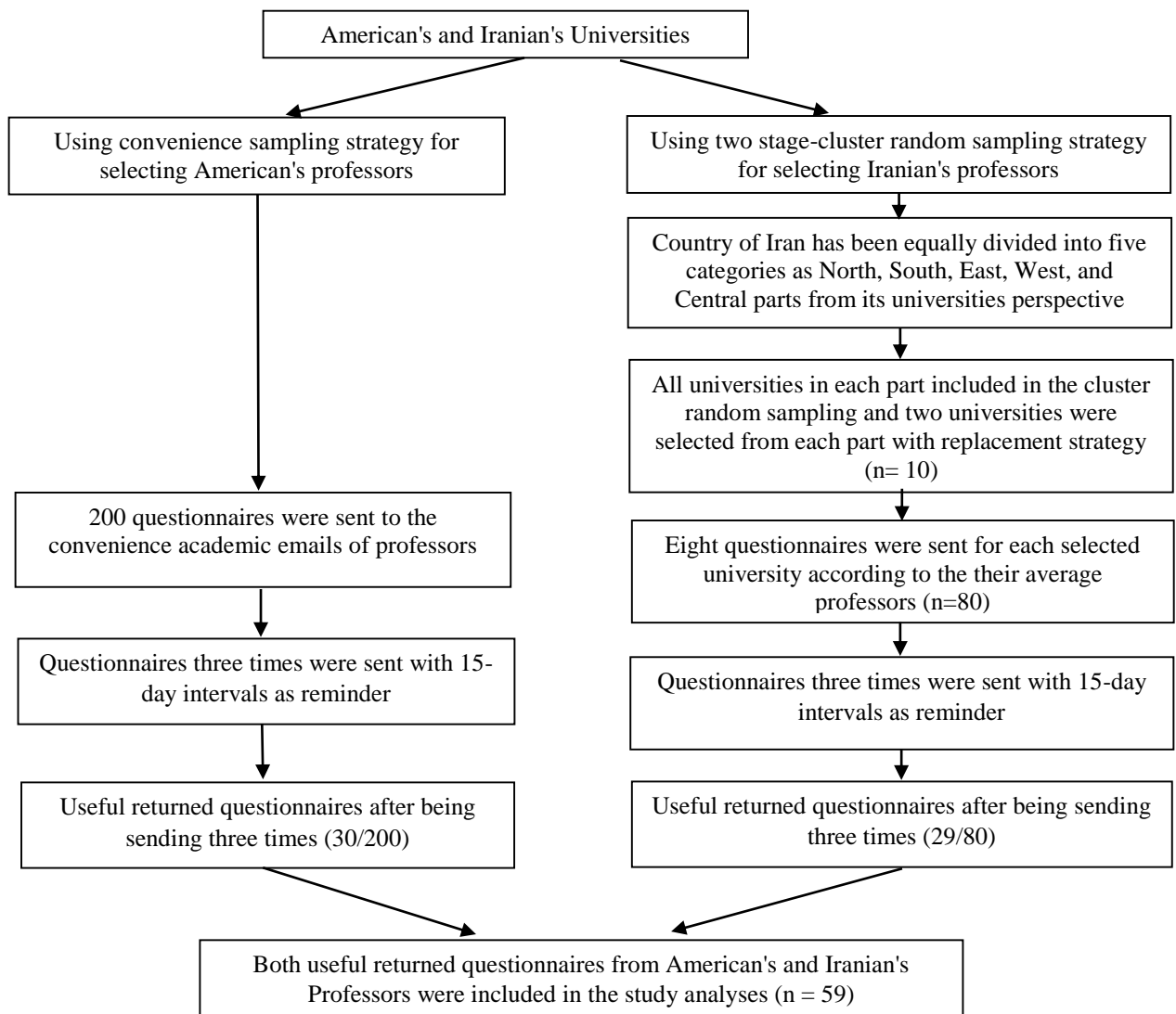

American's and Iranian's Universities

Using convenience sampling strategy for selecting American's professors

Using two stage-cluster random sampling strategy for selecting Iranian's professors

Country of Iran has been equally divided into five categories as North, South, East, West, and Central parts from its universities perspective

All universities in each part included in the cluster random sampling and two universities were selected from each part with replacement strategy (n= 10)

200 questionnaires were sent to the convenience academic emails of professors

Eight questionnaires were sent for each selected university according to the their average professors (n=80)

Questionnaires three times were sent with 15-day intervals as reminder

Questionnaires three times were sent with 15-day intervals as reminder

Useful returned questionnaires after being sending three times (30/200)

Useful returned questionnaires after being sending three times (29/80)

Both useful returned questionnaires from American's and Iranian's Professors were included in the study analyses (n = 59)

Figure1. Fellow chart of recruitment process of American's and Iranian's Professors

2.4. Tool characteristics

The questionnaire was self-administrated one that constructed originally by Loomis in the year 2007 [32]. The questionnaire validation process contains two kinds of validities (face and content) by five panel of experts' professor in nursing. Based on the validity process, slight adjustment was made in demographic, educational and academic items and multiple-choice open-ended questions were reduced from ten to eight questions. Final version of questionnaire contains 15 demographic, educational and academic questions, and 8 multiple-choice open-ended questions (Table 2).

The multiple-choice open-ended questions were addressed four domains as: factors that affected the students to seek a doctorate; factors that affected their decision to participate the DNP program instead of a PhD degree program; factors that affected the choice of the particular school; and finally career intentions after graduation.

2.5. Data collection

After the final selection of universities, questionnaire was emailed to academic and non-academic emails of selected professors in Iran and academic emails of selected professors in USA. Each email consists of four sections: brief explanation about authors and their academic place; aim and purposes of study; all phases of study implementation; and finally tool characteristics. After the initial sending of the questionnaire, with interval of 15-day, two other steps as the reminder, questionnaire were sent to selected professors.

Fifteen-day after the third-time the questionnaire sent, was regarded as study endpoints. The response rate of returned

Table 2. Self-administrated 23 questions questionnaire

1- What school are you currently attending?

2- Are you currently enrolled (or will you potentially enrolled) in a Doctor of Nursing Practice degree program, either DNP or DrNP, through this school?

3- What year of the program are you enrolled in currently?

4- What is your planned year of completion?

5- How old are you?

6- What is your gender?

7- What is your race (Your folk)?

8- What is your home state (City)?

9- What year did you complete your baccalaureate degree?

10- Was your baccalaureate degree in Nursing?

11- If your baccalaureate was not in Nursing, what was the field?

12- Year of Master's degree completion?

13- Was the Master's degree in Nursing?

14- If your Master's degree was in Nursing, what area of specialty?

15- If your Master's degree was not in Nursing, what was the field?

16- What factors influenced (or will potentially influenced) your choice to attend this specific DNP/DrNP program? Click on all that apply.

A - Curriculum Compatible with Interests and Goals   B - Location of School   C - Distance Education Possibilities

D - Attended This School for Undergrad/Grad Education   E - Faculty at This School   F - Family Ties to This School

17- What other factors influenced (or will potentially influenced) your choice to attend this school? (Open-ended question with short essay response).

18- What advantages do you perceive (or will you perceive) to you personally from completing a doctorate in nursing? Click on all that apply.

A - Increase in Intellectual Knowledge   B - Career Advancement   C - Evidence-Based Practice   D - Eligibility as Nursing Faculty   E - Increase in Income   F - Improvement in Clinical Skills   G - Improvement in Communication Skills   Please identify any additional advantages.

19- What advantages do you perceive (or will you perceive) to you personally from completing the DNP program? Click on all that apply.

A - Increase in Intellectual Knowledge   B - Career Advancement   C - Evidence-Based Practice   D - Eligibility as Nursing Faculty   E- Increase in Income   F-Improvement in Clinical Skills   G - Improvement in Communication Skills   Please identify any additional advantages.

20- Did you consider pursuing a PhD or DNP degree?   **A - Yes   B - No**   Please explains why or why not?

21- What are your professional intentions after DNP graduation?

A - Nursing Education   B - Primary Care Clinical Practice   C- Nursing Research   D - Acute Care Clinical Practice   E - Administration   F-Women's Health Care Clinical Practice   G - Public Health Nursing H - Forensic Nursing   I - Occupational/Business Health Management

22- What are your professional intentions after PhD graduation?

A-Nursing Education   B - Primary Care Clinical Practice   C - Nursing Research   D - Acute Care Clinical Practice   E - Administration   F-Women's Health Care Clinical Practice   G - Public Health Nursing   H - Forensic Nursing   I - Occupational/Business Health Management

23- Do you have any additional comments that might clarify your choice of the DNP degree program?

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questionnaire was 36% (29/80) in Iran and for the USA as the previously was anticipated, response rate was 15% (30/200). Although the response rate of questionnaire in Iran wasn't high, for internet-based survey, was acceptable. It should be noted that the questionnaire took 20 – 30 minutes to complete, depending on the time spent answering the essay questions.

2.6. Data analysis

All analyses were performed using SPSS 11.0 (SPSS Inc., Chicago, IL, USA). Frequency (Percent), and mean (Standard Deviation) were presented for qualitative and quantitative variables, respectively. For better management of open-ended questions, qualitative summative content analysis was conducted. First, several times, all of responses were read by first author to obtain the sense of whole. Then, meaning units were counted and sorting meaning units into sub-themes based on comparisons regarding their similarities and differences; and finally formulating themes as the expression of the latent content of the open-ended responses. Concerning rigor, credibility was founded through member checking and prolonged engagement with the open-ended responses. Member checking was done by asking the respondents to ascertain the preliminary findings from the earlier responses. The rigor of the study was improved by asking five participants to compare the results of the study with their own responses (Two American's professors and three Iranian's professors). Four expert supervisors and three other doctoral students of nursing conducted the peer checking. Prolonged engagement with the participant's responses within the research field helped the first author to gain the participants, trust and a better understanding of the research fields. The analysis was completed by recognizing a number of themes that appeared to explain related materials about the study purposes. For

development of new PhD curriculum, two panel of experts with the well-matured and well-known members of nursing board (n=3) and nursing faculties (n=5) was conducted that was resulted final version of new PhD curriculum (Table 6).

3. Results
3.1. Iranian's professors
Mean and Standard Deviation of questions five, nine, and twelve were 44.58 ± 9.08; 1991.66 ± 8.09; and 1996.64 ± 7.10, respectively. 51.3% of participants were female. In answer to the first-question, universities like Baqiyatallah, Tehran, Esfahan, Shiraz, Ahvaz, Mashhad, Gilman, Oroomiyeh, Zahedan, and Mazandaran University of Medical Sciences (UMS) were stated. In answer to the second-question, the majority of participants were expressed that they don't tend to participate in DNP program (79%) and question three was left without any answer. In response to the fourth-question, from 21% positive response to the question two, only 37% replied. In response to the seventh-question, all of participants were expressed that Asians (Iranian). Response to question eight was similar to the first question. Responses to the tenth and thirteenth questions were positive. All participants were responded to the eleventh and fifteenth questions as negative. Responses to the fourteenth-question were shown in table 3.

Table 3. Different master's degree specialties (Number been counted)

Medical Surgical Nursing (MSN) (17)
Intensive Care Nursing (CCN) (9)
Psychiatric Nursing (PsyN) (2)
Nursing Management (NMana) (5)
Pediatric Nursing (PedN) (3)
Community Health Nursing (CHN) (2)
Neonatal Intensive Care Nursing (NICN) (1)

3.2. American's professors
Unfortunately, from the 30 returned questionnaires, only 3 questionnaires had responses to the first to the fifteenth questions. The only responses were given for the sixteenth to the twenty-third questions as full-complete answers. Responses to the multiple-choice open-ended questions for

both of professor's groups [16, 17, 18, 19, 21, 22] were shown in table 4. It should be noted that the majority of participants (Iranians and Americans) in response to the "please identify any additional advantages mentioned" item, were expressed that mentioned list was so complete and in question seven, some participants were given prioritizes of mentioned list.

According to the qualitative summative content analysis, responses to the 20 and 23 questions were analyzed. 60% of American's professors were given positive response to the question 20 and in the response to the questions 23, were expressed that in our content, both of doctoral programs are so common. The important point is personal interested in studying one of that. Interestingly, all of American's professors in responses to "what are additional points", were referred to the previous open-ended questions and in this section, no new items were added. This is done while, behaviors of Iranian's professor's were completely different from aforesaid professors. According to the qualitative summative content analysis, none of participants didn't mention advantages or disadvantages of DNP or PhD, but all of them were clearly expressed that "any program has different and special matters that these matters maybe becoming for that specific program as quite desirable and satisfactory while maybe these quite desirable and satisfactory matters becoming as quite undesirable and unsatisfactory for another program". However, what was expressed in all of writings was, current status of nursing aren't ready for such a change. This main theme was supported by six challenging sub-themes: Ministry of Health and Medical Education challenges, senior authorities of Medical Sciences Universities especially physicians, senior authorities of Nursing Faculties especially older members, senior authorities of hospitals especially physicians, Nursing students specially graduate and postgraduate levels, and finally acceptance of people and their participation in the implementation of such a plan.

4. Discussion
Comparison purposes of the PhD and DNP programs and determining appropriate doctoral program from the

Table 4. Responses to the multiple-choice open-ended questions number 16, 18, 19, 21 and 22

Questions	Iranian's Professors	American's Professors
16- What factors influenced (or will potentially influenced) your choice to attend this specific DNP/DrNP program?	91.8	69.5
A - Curriculum Compatible with Interests and Goals	65.8	49.6
B - Location of School	35.4	48.1
C - Distance Education Possibilities	10.4	33.6
D - Attended This School for Undergrad/Grad Education	---	19.4
E - Faculty at This School	---	---
F - Family Ties to This School		
18- What advantages do you perceive (or will you perceive) to you personally from completing a doctorate in nursing?	100	84.6
A - Increase in Intellectual Knowledge	100	69.3
B - Career Advancement	83.6	58.9
C - Evidence-Based Practice	100	76.3
D - Eligibility as Nursing Faculty	100	68.1
E - Increase in Income	23.8	85.7
F - Improvement in Clinical Skills	33.4	87.5
G - Improvement in Communication Skills		

19- What advantages do you perceive (or will you perceive) to you personally from completing the DNP program?	100	90.3
A - Increase in Intellectual Knowledge	100	74.5
B - Career Advancement	100	67.9
C - Evidence-Based Practice	21.5	98.4
D - Eligibility as Nursing Faculty	56.4	87.5
E- Increase in Income	87.8	77.8
F- Improvement in Clinical Skills	56.8	98.1
G - Improvement in Communication Skills		
21- What are your professional intentions after DNP graduation?		
A - Nursing Education	68.9	65.4
B - Primary Care Clinical Practice	100	87.2
C- Nursing Research	56.1	54.4
D - Acute Care Clinical Practice	100	90.2
E - Administration	55.5	73.6
F-Women's Health Care Clinical Practice	---	34.6
G - Public Health Nursing	---	32.4
H - Forensic Nursing	---	21.3
I - Occupational/Business Health Management	93.2	11.4
21- What are your professional intentions after PhD graduation?		
A - Nursing Education	100	76.4
B - Primary Care Clinical Practice	23.3	56.7
C- Nursing Research	100	37.3
D - Acute Care Clinical Practice	35.6	89.5
E - Administration	100	41.3
F-Women's Health Care Clinical Practice	---	31.3
G - Public Health Nursing	12.3	32.5
H - Forensic Nursing	---	9.2
I - Occupational/Business Health Management	---	5.2

American and Iranian professor's perspective according to the academic and clinical contexts were the purposes of this study. From the demographic, educational, and academic questions (number 1 to 15), two important elements were derived.

First, the majority of participants weren't intended to potentially participate in the DNP program and subsequent, they weren't any program after their graduation. From perspective of these responses from the majority ones, it can be understand that either participant perceived barriers to take part in the aforesaid program or hadn't adequate information about that. The authors think that both of reasons can be correct because of Iranian's Medical Context are so physician-centered or "physician salari" markedly. This context is definitely conflicted to the necessary prerequisites of implementing defined and formal DNP program. The reason is, graduates of the DNP program will be advanced practice nurses with the knowledge and skills for fully responsible expert care to patients across all of care settings [33] and all of that earns money of their delivering services. But in Iran, nurses conducted the majority of these deputies, but their money goes directly into the pockets of doctors. This barrier demonstrated as the contextual barriers, although there are others but that aren't very important and are solved by holding several coordination sessions. Another reason has less important than the first reason and that is, the majority ratio of clinical and even academic nurses haven't sufficient and correct information about the different DNP programs.

Furthermore, the second point is, none of participants not giving positive responses to the 10 and 13 questions. It point is positive matter that the infrastructure and basic knowledge and skills of Iranian's nurses are so rich, but unfortunately, the educational system of Iranian's nursing education hadn't unique and organized planning and programming for the such rich and powerful infrastructure in the BS and MS degrees and all of that were labeled as "General Nurse"[28-30].

A detailed and precise view to the multiple-choice open-ended questions, can be unfolded this matter that in all of items, responses of Iranian's professors were approximately higher than American's ones. The possible reason can be explained that responses of American's professors were according to the real and experienced situations but Iranian's ones were only according to the reading of relevant web-sites, literatures, and articles. Anyway, from the table 4, it can be perceived that in all of items, practical items were highly attributed to the DNP and intellectual and academic-related items were highly attributed to the PhD program. Meanwhile, it can be seen that in some items, participant's responses weren't differentiated between these two programs. However, some items weren't compatible with the Iranian's context and for that, some items weren't selected by Iranian's respondents. In other words, Iranian's professors had mixed perspective about DNP and even PhD programs, because of according to the Iranian's context, none of that aren't completely justified or fitted. It should be noted that the main reason of doctorate program is ameliorated and enhanced practice-based evidence by utilizing and producing the best and new knowledge, in other words, we need a blended doctoral program that can cover a broad continuum of practical, clinical, knowledge and research skills. At one end of this continuum, research-based doctoral has placed, like PhD, which is more established and recognizable in nursing [34, 35] and at other end of this continuum, practice-based doctoral has placed,

like DNP, which is less than PhD established and recognizable in nursing except the U.S.A [36, 37]. In this line, McKenna (2005) expressed that practice doctorate nursing graduates will be motivated and fascinated to work in universities and "without an adequate background in the knowledge and skills necessary for teaching and scholarship, these people may be set up for failure in the University setting" (p.246)[38]. Then, for better achieving the advantages of both doctoral programs and minimizing the disadvantages of both programs, both of that should joint to each other (Hybrid model)[39].

The first hybrid model in nursing in Australia, the DNurs degree, originally accentuated on 50% research and 50% coursework from 1997 until 2005 when the emphasis on research was increased to 66% or 2/3[6, 7]. Other hybrid professional doctoral degrees (table 5) were conducted in the U.S.A which indeed educate researching professionals and could be fertile ground for practice-based, practical, action-oriented and knowledge generation[40, 41]. In this regards, the important matter is balancing between the practical and research doctoral programs according to the contextual bridges and barriers. These topics aren't devoted to Iranian's context and we can find a clue to these topics in other countries. McKenna (2005) has explained that the metrics for measuring success in university settings (e.g., research publications, grant income, attracting post-graduate students, etc.) and which PhD programs purpose to

ready students for, do not have much value to clinical directors exposed with the logistical problems of day-to-day operations. Perhaps then DNP programs need not teach these skills. On the other hand, others expressed that practice is not a stand-alone phenomenon, rather, it is a direct outcome of one's philosophical beliefs; beliefs that should be well-grounded in philosophy of science which is central to PhD programs [40, 41]. Furthermore, according to the very comprehensive searching and comparing other programs in other countries, we can conclude that Iranian's context need a doctoral program with both clinical and research bases. For us, it's not necessary that we apply non-cultural and non-contextual doctoral program model for our country, so, the useful action is modification of our PhD curriculum in line with our objectives.

The final message of this discussion is, selecting and integrating the appropriate components of both of practice-based and research-based doctoral in nursing. In this model, we categorized the doctoral program in two sections. The first section is related to the theoretical courses with the purpose of student preparing for generating new knowledge, confirming previous knowledge, purifying previous knowledge, and finally translated knowledge into practice. The second section is related to the appropriate and specific clinical courses. The purpose of the second section is preparing student for independent working in specific area. Table 6 is shown this new PhD curriculum.

Table 5. International professional doctoral nursing degrees [6, 7]

United Sates	Australia	United Kingdom and Ireland
DNP- Doctor of Nursing Practice	DM- Doctor of Midwifery	DM- Doctor of Midwifery
DrNP- Doctor of Nursing Practice	DN- Doctor of Nursing	DNursing- Doctor of Nursing
DNAP- Doctor of Nurse Anesthesia Practice	DNSc- Doctor of Nursing Science	DNurs- Doctor of Nursing
DMPNA- Doctor of Management Practice of Nurse Anesthesia	DMid- Doctor of Midwifery	DMid- Doctor of Midwifery
		DnursSci- Doctor of Nursing
		DHC- Doctorate in Healthcare-Nursing
		DNSc- Doctor of Nursing Science
		DNP- Doctor of Nursing Practice

Table 6. The innovative PhD curriculum outline

Code	Course title	Credit	Required hours			Prerequisite
			Theoretical	Practical	Total	
1	Philosophy, Nursing Theories and Theorizing	3	34	Project (17)	51	None declared
2	Application of Qualitative and Quantitative Research Methods in Nursing	3	34	Project (17)	51	Code of lesson 8
3	Design and Implementation of Different Review Articles	3	34	Project (17)	51	Code of lessons 2, 4, 5, 7,and 8
4	Design and Implementation of Specialized Information Technology in Nursing	2	17	Project (17)	34	None declared
5	Educational and Research Tools Generation	2	30	Project (4)	34	Code of lesson 8
6	Application of Educational, Research, and Clinical Evaluation Methods	2	17	Project (17)	34	Code of lessons 4, 5, and 7
7	Application of Knowledge Management in Society and Clinical Settings	3	34	Project (17)	51	Code of lessons 4, 5, and 6
8	Comprehensive Statistical Analysis Methods	3	34	Project (17)	51	None declared

9	Theoretical Dissertation on the Nursing Challenges	3	Published an Article in Information Sciences Institute (ISI) is Required	
Total Theoretical Credits : 24				
10	Residency for Doctor of Philosophy in Nursing I	5	500 Clinical Hours with Supervision	Total Theoretical Credits
11	Residency for Doctor of Philosophy in Nursing I I	5	500 Clinical Hours with Supervision	Code of lesson 10
12	Residency for Doctor of Philosophy in Nursing I I I	5	500 Clinical Hours without Supervision	Code of lesson 11
13	Residency for Doctor of Philosophy in Nursing I V	5	500 Clinical Hours without Supervision	Code of lesson 12
14	Clinical Dissertation on the Nursing Challenges	2	Published an Article in Information Sciences Institute (ISI) is Required	
Total Clinical Credits : 22				
Total Theoretical and Clinical Credits: 46				

The detailed course and listen plan of the new PhD curriculum will be presented in other article. The implementing process of this new PhD curriculum not much differences to the previous one and we don't need a significantly change in the PhD courses, number of faculties, college and hospital environments. Moreover, this new curriculum doesn't interfere with other medical discipline and completely is agree to the Iranian's Medical Education System. Maybe the most reason of this compatibility to the Iranian's Medical Education System explained by clinical hours in hospitals instead of doctoral dissertation. Although in the last part of both sections, there are light dissertations. The researchers strongly make a belief that, this change won't influence to the research capability and authority of PhD students because of the PhD students have experienced in doing research in the MS level and they will conduct two light dissertations at the end of their courses.

5. Conclusion

The evolution of such new doctoral program in nursing especially in the developing countries due to their limitations, deficiencies, and even lack of resources, needs a multi and interdisciplinary partnership and cooperation to ameliorate bridges and reducing barriers; because of the majority of doctoral courses have dynamic nature and for that, need to modify and reconsider continuously. Furthermore, for better managing the new and sometimes challenging situations, such partnership and cooperation are so necessary. In the first part of this article, we are shown how we can justify appropriate doctoral program to the contextual settings. Furthermore, we concluded that for better introducing optimized doctoral program, curriculum designers must be familiarized with the different influencing factors that can impact on our optimized curriculum such as educational, college and hospital environmental, faculty members, current and prospectus student's factors. It is notable that these instances have a dual performance. From one side, we can improve the current situation of nursing doctoral program in the nation and after that in the international levels, and from other side, we can prevail on the negative factors that influencing recruitment and retention of nurses and improving positive ones.

In this research, we have several limitations. First, we conducted an internet survey and this kind of survey has specific disadvantages such as unusual attrition, difficulty in sending questionnaire and increased possibility of attrition rate. Second, a considerable proportion of the participants didn't adequate information about the DNP and these matters caused our sample size reduced and we obliged used to two phases cluster random sampling and sampling is restricted to some informant participants. Third, our some informant participants didn't direct experience from the DNP program and their responses weren't lived experiences and their even expressed their knowledge about topic established on the reading relevant web-sites, articles, and books. Furthermore, the multiple-choice open-ended questions must be interpreted so cautions. Finally, we can recommend that for internalizing and introducing the appropriate contextual doctoral program, applying in the first line different applicable qualitative methods including phenomenology, grounded theory, and action research and in the last step, ethnography study can unfold hidden and context-based issues. These matters can help us to introduce real cause and effect and roots of determining the appropriate bricks for making the appropriate context-based nursing doctoral program.

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