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Short Communication

Faculty Readiness and Learning Needs for Incorporating Virtual Healthcare into the Curriculum

Kelley Connor[1*], Jason Blomquist[1], Darci McCall[1], Cara Gallegos[1], Janet Reis[1]

[1]School of Nursing, Boise State University, Boise, Idaho, USA

[*]**Correspondence to: Kelley Connor**, PhD, Researcher, School of Nursing, Boise State University, 1910 University Drive, Boise, Idaho 83725, USA; Email: kelleyconnor@boisestate.edu

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Abstract

Objective: Virtual healthcare technologies are becoming increasingly acceptable and available to patients and providers to deliver care. Although common in practice settings, many nursing schools have not integrated virtual care concepts into the curriculum. One reason may be because faculty are not prepared to teach these concepts. The purpose of this study was to assess the virtual healthcare learning needs of faculty.

Methods: An exploratory, descriptive study design was used to evaluate faculty receptiveness and readiness to teach virtual nursing care concepts. Thirty-seven full time faculty members were asked to complete an anonymous survey consisting of demographic, open-ended, and Likert scale items based on the technology acceptance model, the Virtual Clinical Practicum Attitude Survey, and the Evidence-Based Practice Beliefs scale. Quantitative data was evaluated using descriptive statistics and qualitative data with a thematic analysis process.

Results: Twenty-two faculties completed a survey regarding their beliefs about virtual healthcare technologies. Most respondents believe that virtual care improves access for patients and that students should have training in these technologies. However, few had used virtual technology in their own clinical practices and wanted further education about them. Faculty was receptive to integrating virtual care into the curriculum and reported their learning needs could be met through didactic content and simulation activities with faculty as learners.

Conclusion: An opportunity exists to prepare faculty to teach virtual healthcare concepts. Addressing faculty learning needs could aid in the successful integration of virtual healthcare concepts into the curriculum, thus, better preparing students to deliver virtual care to their future patients.

Keywords: virtual healthcare, telehealth, nursing education, faculty development

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1 INTRODUCTION

1.1 Faculty Readiness and Learning Needs for Incorporating Virtual Healthcare into the Curriculum

Virtual healthcare technologies (such as telehealth) have become increasingly utilized in the clinical setting. These technologies allow healthcare workers to interact virtually with people in a variety of different ways including telehealth, remote patient monitoring, and by storing and forwarding images. The coronavirus disease 2019 pandemic caused a dramatic surge in the use and acceptance of virtual care options among patients and providers. The American Hospital Association predicts that virtual health services could soon account for 35% of home health visits and 24% of outpatient visits, while more than 50% of hospitals within the United States have already implemented forms of inpatient telehealth services[1,2]. Because virtual care is accessible, convenient, and connects to specialists that may not otherwise be available, it is unlikely that the use of virtual technologies will diminish to pre-pandemic levels. Virtual healthcare technologies can be found in nearly every healthcare setting and specialty, affecting all members of the healthcare team, patients, payors, and the community. Currently, more than 40% of front-line nurses report the use of virtual modalities in their practice. Because nursing practice now includes virtual health options, it is imperative to understand how these care modalities should be incorporated into the nursing education curriculum[2].

Although registered nurses are being called on to implement virtual health services, there is little consensus or guidance on how to build virtual healthcare competencies into pre-licensure nursing programs. Simulation may be an effective way to educate students on the use of virtual care practices because they can be integrated into existing simulation cases thus providing a realistic clinical representation and the opportunity for experiential learning. A potential complication, however, is that nursing faculty may not be prepared to teach virtual care concepts because its use is relatively new, and it may not have been a part of their own clinical practice. In addition, nursing faculty may not incorporate technology into teaching due to a lack of desire to learn the technology[3].

1.2 Background

Existing literature on integrating virtual health skills and competencies into educational programming is primarily focused on physicians and advanced practice registered nurses[4]. As guidance for developing competencies and outcomes, the American Nurses Association[5], American Academy of Ambulatory Care Nursing[6], and National Organization of Nurse Practitioner Faculties[7] have begun to define principles, scope, and standards of practice around the use of virtual health services in nursing. Informatics and healthcare technology competencies have been recommended by the American Association of Colleges of Nursing[8] for nurses obtaining entry level and advanced educational programming. Although technology guidelines and outcomes for nursing practice continue to develop, it is unclear if existing nursing faculty have the professional practice knowledge, desire, or preparation to teach the content. This creates a potential gap between curricular requirements and faculty readiness to address those requirements. The specific aims of this study were threefold: to describe faculty knowledge and experience using virtual healthcare options, to describe faculty desire to implement virtual care concepts into their courses, and to begin planning how to prepare faculty to integrate virtual healthcare options into the curriculum.

The theoretical framework underpinning this study is the technology acceptance model (TAM). Based on two core beliefs, perceived usefulness and perceived ease of use, the TAM provides insight into an individual's intent to use technology[9]. It suggests that perceptions of usefulness and ease of use influence attitude toward technology. If attitudes are positive, then a person will have the intention to use the technology which is followed by actual use[9]. Exploring the attitudes of nurse faculty towards virtual health technology will help guide the development and extent of resources to prepare faculty to teach virtual health competencies. The purpose of doing this is to prepare faculty to teach concepts before threading the content throughout the curriculum so that integration will be successful.

2 MATERIALS AND METHODS

We used an exploratory, descriptive study design[10]. This design was useful for understanding faculty perceptions so that gaps in knowledge could be identified and used to develop relevant training materials. Following the Institutional Review Board (IRB) approval (IRB protocol #186 SB21 176), full-time faculty from the School of Nursing at Boise State University, at a public university in the northwestern United States were recruited to participate. An email with the survey link was sent to all full-time faculty in the prelicensure, registered nurse to bachelor of science, master of science, and doctorate of nursing practice programs in the fall of 2021 after receiving IRB approval for the study. The survey was introduced as a voluntary and anonymous method for faculty to offer suggestions and perspectives on the rapidly expanding use of telehealth in nursing care. Survey responses were downloaded to an excel file for analysis. A reminder email to complete the survey was sent after 2 weeks.

2.1 Measures

A 36-item questionnaire was developed for this study

by the authors based on three validated questionnaires, the TAM[9], the Virtual Clinical Practicum Attitude Survey (VCPAS)[11], and the Evidence-Based Practice Beliefs scale (EBPB)[12]. The TAM provided the basis for the survey with additional questions derived from the VCPAS and EBPB that supported an assessment of virtual care technology. The questionnaire consisted of 7 demographic questions, 22 Likert scale items and 7 open-ended questions. For each Likert question, participants rated their level of agreement on a scale of 1-5 (0=strongly disagree; 5=strongly agree).

2.2 Analysis

We analyzed quantitative data using statistical package for social sciences (SPSS, IBM, v. 27). We used descriptive statistics to describe the demographic variables. Open-ended questions were analyzed by authors independently for themes and content analysis. Results were categorized according to the organizing TAM themes for technology acceptance: Perceived usefulness, ratings of ease of use in instruction, and intentions to use in instruction. Intentions to use were summarized from the open-ended survey questions.

3 RESULTS

3.1 Demographics

Thirty-seven full time faculty members (22 clinical track, 4 tenure track, and 11 tenured faculty) were invited to participate in the study. Twenty-two respondents replied resulting in a response rate of 59.5%. Sixty eight percent (n=15) of the respondents taught in the pre-licensure program, with the remaining teaching in the doctor of nursing practice (14%; n=3), the registered nurse-bachelor of science in nursing on-line program (n=2; 9%) and the adult gerontology nurse practitioner program (n=2; 9%). The average age of participants was 49.95 years (ranging from 42-64 years) and time as a practicing nurse ranged from 16 to 44 years (M=25.6 years). The average time spent teaching was 12 years (1-28 years). The majority (81%) of faculty respondents had personal experience with telehealth, as compared to 31% who have interacted with virtual health in their own nursing practice.

3.2 TAM Themes

3.2.1 Perceived Usefulness

There was near unanimity on virtual health improving access to care, and that health care leaders think virtual health care is important (Table 1). The role of virtual health in both student nurse and practicing nurse training was endorsed as somewhat or very important for at least 80% of the faculty. In the open-ended responses, several participants shared similar views that healthcare is moving towards more virtual care delivery. One participant responded that virtual health "is the way of the future in healthcare," while another shared that expanding virtual care services may be an important strategy to use in decreasing known health disparities such as access to care. In addition, faculty commented that the virtual care option may be an effective tool for nurses to provide patient education.

3.2.2 Ease of Use

Level of preparedness of faculty to use and teach virtual health ranged from two thirds stating they were somewhat or very comfortable using virtual health themselves to 27% believing they had the resources to successfully integrate virtual health skills (Table 1). In descending order of questions about teaching or incorporating virtual health into their class, eighty percent agreed that while it would be a lot of work, it would be worthwhile, 73% felt that learning to teach it would be easy, 62% had the necessary resources to teach it, 50% were sure they had access to the best resources, and 42% understand the language of virtual health. The resources identified by participants as needed to integrate virtual care into their courses included time, simulation practice, policies, and more knowledge of virtual care delivery.

3.2.3 Intentions to Use

Approximately 60% of the respondents are interested in using and teaching about virtual health (Table 1). Of this subgroup, 69% reported using no telehealth topics in their current course work, yet the same percentage were interested in integration of the topic into their courses. One participant shared in their written comments that the integration of virtual care into the community course may provide a useful method to connect students with rural populations when developing their community health projects. Another shared that teaching students to use virtual care delivery during their education will help create a nursing workforce that is ready to use it upon graduation. Training for faculty in a simulation laboratory was cited as a needed resource by 44%. However, one participant shared that simulation is already being used to teach virtual health concepts in their course and they would be willing to facilitate the use of virtual care in simulation for other courses.

4 DISCUSSION

The coronavirus disease 2019 pandemic provided an opportunity for healthcare systems to explore virtual technologies in providing care to patients. Nurses are an integral part of the care delivery team; thus, consideration must be given to how these concepts are taught in nursing curriculum. There is a clear gap in the literature describing nursing faculty experience with incorporating virtual care concepts into curriculum. While the need for integrating these concepts has been clearly identified and supported by the American Association of Colleges of Nursing[8], there is limited

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Table 1. Faculty Perceptions of Virtual Healthcare Technologies

Question	Mean (SD)	% (*n*) Strongly Disagree	% (*n*) Somewhat Disagree	% (*n*) Neither	% (*n*) Somewhat Agree	% (*n*) Strongly Agree
Virtual healthcare options improve access to care.	4.79 (0.41)	0.0	0.0	0.0	20.83 (5)	79.17 (19)
Telehealth could be a viable clinical option for students	4.29 (0.79)	0.0	4.17 (1)	8.33 (2)	41.67 (10)	45.83 (11)
Students should have training regarding virtual health.	4.79 (0.58)	0.0	0.0	8.33 (2)	4.17 (1)	87.5 (21)
Practicing nurses should have virtual health training options.	4.71 (0.54)	0.0	0.0	4.17 (1)	20.83 (5)	75.0 (18)
I use technology at home when possible.	4.63 (0.7)	0.0	4.17 (1)	0.0	25.00 (6)	70.83 (17)
I am comfortable using virtual health in the clinical setting.	3.79 (1.19)	4.17 (1)	16.67 (4)	8.33 (2)	37.5 (9)	33.33 (8)
Virtual health training should be a permanent part of the nursing curriculum.	4.63 (0.81)	0.0	4.17 (1)	8.33 (2)	8.33 (2)	79.17 (19)
Incorporating virtual health will be a lot of work, but will be worth it.	4.46 (1.0)	0.0	8.33 (2)	12.50 (3)	4.17 (1)	75.0 (18)
I understand the language of virtual health (e.g., terms like store-and-forward, real-time virtual health, remote monitoring, originating site).	3.46 (1.04)	4.17 (1)	16.67 (4)	20.83 (5)	45.83 (11)	12.50 (3)
Teaching students virtual health is important for developing their career.	4.46 (0.87)	0.0	8.33 (2)	0.0	29.17 (7)	62.50 (15)
Virtual health skills could improve the quality of care that students deliver.	4.42 (0.7)	0.0	0.0	12.50 (3)	33.33 (8)	54.17 (13)
I am sure that implementing virtual health into the curriculum will be important to students after graduation.	4.42 (0.91)	0.0	8.33 (2)	4.17 (1)	25.0 (6)	62.50 (15)
I believe that incorporating virtual health into the curriculum takes too much time.	2.17 (1.03)	33.33 (8)	25.0 (6)	37.50 (9)	0.0	4.17 (1)
Learning to teach virtual health will be easy for me.	3.67 (0.8)	0.0	12.50 (3)	16.67 (4)	62.50 (15)	8.33 (2)
Overall, I believe that virtual health skills will be easy to teach.	3.63 (0.75)	0.0	8.33 (2)	29.17 (7)	54.17 (13)	8.33 (2)
I believe that I can identify and overcome barriers to implementing virtual health.	4.42 (0.49)	0.0	0.0	0.0	58.33 (14)	41.67 (10)
Colleagues whose opinions I value, think I should use virtual health.	3.54 (0.91)	0.0	4.17 (1)	62.50 (15)	8.33 (2)	25.0 (6)
I have the resources I need to successfully integrate virtual healthcare skills.	3.29 (0.93)	0.0	20.83 (5)	41.67 (10)	25.0 (6)	12.5 (3)

Healthcare leaders think virtual health is important.	4.63 (0.56)	0.0	0.0	4.17 (1)	29.17 (7)	66.67 (16)
I intend to use virtual health when it is available in the clinical setting.	3.67 (0.85)	0.0	4.17 (1)	45.83 (11)	29.17 (7)	20.83 (5)
I intend to teach virtual health skills as often as needed.	4.04 (0.73)	0.0	0.0	25.00 (6)	45.83 (11)	29.17 (7)
I am sure that I can access the best resources in order to implement virtual health.	3.54 (0.96)	4.17 (1)	4.17 (1)	41.67 (10)	33.33 (8)	16.67 (4)

research examining faculty integration of concepts into nursing curricula[13,14]. In a recent study, Eckhoff et al.[13] reported that 55% of prelicense nursing programs contained no virtual care concepts and only 22% planned to incorporate these in the future. A systematic review conducted by Foster et al.[14] strongly supported the need for integrating these concepts in nursing education but pointed to the lack of faculty readiness as a barrier. Results from our survey support the findings from Foster et al.[14] and provide a foundation for incorporating these concepts into our curriculum.

Most nursing faculty members have experienced virtual care as a patient or family member. The majority has not used virtual care technology as a nurse and do not currently use it in their teaching, but expressed an interest in learning about and teaching about virtual care. These findings were unexpected. It was anticipated that faculty interest in learning about virtual healthcare would be low because of workload issues and exhaustion during the pandemic. However, faculty demonstrated interest in virtual healthcare options and in receiving training for how they could learn more about these options. According to the TAM framework, these positive attitudes towards virtual technologies would likely result in successful curriculum integration.

Based on survey results, the School of Nursing will enact a multi-tiered plan to successfully prepare faculty to integrate virtual health concepts into the curriculum. First, education will be developed to expose faculty to current industry utilization of virtual healthcare and to increase their knowledge and comfort with these tools. This may take the form of didactic content, observing applications in local healthcare systems, and simulation experiences for faculty to experience virtual care from both the provider and patient point of view. After faculty are prepared to teach virtual concepts, a needs assessment will be completed to identify opportunities across the pre-licensure simulation curriculum to determine where virtual care can be added to existing simulations or where new simulations should be developed to address virtual care concepts.

Potential limitations of this study include a small sample size and participant bias. Participants were recruited from a single site with an existing accredited simulation center that is well supported by faculty and resources. Faculty in this setting may be biased toward the use of educational technology due to previous simulation experiences. Another limitation was that no adjunct faculty completed the survey. Adjunct faculty is typically employed in the clinical setting and would likely have more experience with virtual care technologies and would not generally be teaching didactic content or simulation experiences.

5 CONCLUSION

The aims of this survey were to evaluate faculty readiness and learning needs related to incorporating virtual healthcare technology into the curriculum. Survey findings indicated both clinical and tenured faculty supported incorporating virtual health in the nursing curriculum and viewed it as important to facilitating access in patient care. In general, they had a positive attitude towards using virtual technology, were open to learning more about virtual care, and were open to including virtual content in their teaching. However, faculty expressed clear concerns about their own educational needs related to virtual healthcare and indicated their needs could be addressed with education, technology practice, and assistance with integrating virtual concepts into their course. Faculty training could be accomplished through didactic content, simulation activities with faculty as learners, and collaboration to revise existing course content to include virtual health technologies throughout the curriculum. Addressing faculty learning needs related to virtual care is the first step in facilitating successful curricular integration.

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Conflicts of Interest

The authors had no conflict of interest to disclose.

Author Contribution

Connor K supervised the study team, assisted in survey development, and contributed to writing and revising the

manuscript. Reis J, Blomquist J, and McCall D designed the study, developed the survey, and participated in manuscript writing and revision. Gallegos C contributed to survey development, conducted data analysis, and assisted in writing, proofreading, and revising the manuscript.

Abbreviation List

EBPB, Evidence-Based Practice Beliefs scale
IRB, Institutional Review Board
TAM, Technology acceptance model
VCPAS, Virtual clinical practicum attitude survey

References

[1] American Hospital Association. Fact sheet: Telehealth. Accessed February 1, 2022. Available at:https://www.aha.org/system/files/2019-02/fact-sheet-telehealth-2-4-19.pdf

[2] American Hospital Association. 2022 Health care talent scan. Accessed February 1, 2022. Available at:https://www.aha.org/system/files/media/file/2021/10/AHA-Health-Care-Talent-Scan-2022.pdf

[3] Kotcherlakota S, Kupzyk KA, Rejda P. Years of experience as a predictor of nurse faculty technology use. *J Nurs Educ*, 2017; 56: 115-119. DOI:10.3928/01484834-20170123-09

[4] Chike-Harris KE, Durham C, Logan A et al. Integration of telehealth education into the health care provider curriculum: A review. *Telemed J E Health*, 2021; 27: 137-149. DOI:10.1089/tmj.2019.0261

[5] American Nurses Association. ANA core principles on connected health. Accessed February 1, 2022. Available at:https://www.nursingworld.org/~4a9307/globalassets/docs/ana/practice/ana-core-principles-on-connected-health.pdf

[6] American Academy of Ambulatory Care Nursing. Scope and standards of practice for professional telehealth nursing, 6th ed. American Academy of Ambulatory Care Nursing: New Jersey, USA, 2018.

[7] National Organization of Nurse Practitioner Faculties. NONPF supports telehealth in nurse practitioner education. Accessed February 1, 2022. Available at:https://cdn.ymaws.com/www.nonpf.org/resource/resmgr/2018_Slate/Telehealth_Paper_2018.pdf

[8] American Association of Colleges of Nursing. The essentials: Core competencies for professional nursing education. Accessed February 1, 2022. Available at:https://www.aacnnursing.org/Portals/0/PDFs/Publications/Essentials-2021.pdf

[9] Davis FD, Bagozzi RP, Warshaw PR. User acceptance of computer technology: A comparison of two theoretical models. *Manag Sci*, 1989; 35: 982-1003. DOI:10.1287/mnsc.35.8.982

[10] Gray JR, Grove SK. Burns and grove's the practice of nursing research, 9th ed. Elsevier: St. Louis, USA, 2021.

[11] Grady JL. The virtual clinical practicum: An innovative telehealth model for clinical nursing education. *Nurs Educ Perspect*, 2011; 32: 189-194. DOI:10.5480/1536-5026-32.3.189

[12] Melnyk BM, Fineout-Overholt E, Mays MZ. The evidence-based practice beliefs and implementation scales: Psychometric properties of two new instruments. *Worldviews Evid Based Nurs*, 2008; 5: 208-216. DOI:10.1111/j.1741-6787.2008.00126.x

[13] Eckhoff DO, Guido-Sanz F, Anderson M. Telehealth across nursing education: Findings from a national study. *J Prof Nurs*, 2022; 42: 308-314. DOI:10.1016/j.profnurs.2022.07.013

[14] Foster M, Lioce L, Howell Adams M. Telehealth in nursing education: A systematic review. *J Nurs Educ,* 2021; 60: 633-635. DOI:10.3928/01484834-20210913-06