Developing Blended Online and Classroom Strategies to Deliver an Occupational Health Nursing Overview Course in a Multi-State Region in the United States

A. B. de Castro, PhD, MSN/MPH, RN[1,2], **Erin Shapleigh, MN, RN**[2], **Annie Bruck, DNP, MN, RN, COHN-S**[1], and **Mary K. Salazar, EdD, FAAN**[2]

[1]University of Washington Bothell

[2]University of Washington, Seattle

Abstract

This article describes how hybrid online and classroom learning approaches were used to design and offer an occupational health nursing review course throughout a multi-state region of the northwest United States. In response to demand from practicing occupational health nurses for board certification preparation, a series of asynchronous and synchronous continuing education modules was created covering a range of occupational health nursing topics. This review course illustrates how innovative educational delivery models can serve the needs of occupational health nurses challenged by geographic and time constraints.

Keywords

occupational health nursing; continuing education; distance learning; board certification

To keep abreast of professional practice and ensure proficiency, nurses commonly pursue board certification in their area of specialty. The American Board for Occupational Health Nurses (ABOHN), Inc. recognized that "[t]he attainment of certification in occupational health nursing indicates the nurse has the knowledge and expertise to competently care for individuals in the workplace" (Hart, Lachat, & Fabrey, 2012, p. 2). Certification also demonstrates professionalism and proficiency to employers and the general public (Hart et al., 2012). Furthermore, ABOHN reported that occupational health nurses are responsible for more than 130 types of tasks, including direct care of workers, workers' compensation claims management, and appropriate job accommodation (Hart et al., 2012). In addition to these tasks, occupational health nurses experience continuous changes in the workplace, including an aging and increasingly diverse workforce, as well as fewer resources to manage complex workplace health and safety issues. Given the many demands placed upon

Address correspondence to: A. B. de Castro, PhD, MSN/MPH, RN, School of Nursing and Health Studies, University of Washington Bothell, 18115 Campus Way NE, Box 358532, Bothell, WA 98011-8246, USA; BdeCastro@uwb.edu.

occupational health nurses, currency and competency in practice, demonstrated through board certification, are essential for providing safe and effective care to workers.

Pursuing board certification also contributes to career advancement. The 2005 position statement by the American Board of Nursing Specialties, titled *The Value of Specialty Nursing Certification*, reported that nurse managers prefer to hire nurses who are certified. Niebuhr and Biel (2007) found that nurses identified several reasons for earning professional certification, including personal accomplishment, professional credibility, marketability, recognition from employers, and consumer confidence. ABOHN (2012) stated that occupational health nurses should be certified for prestige, significant personal and professional accomplishment, and career advancement.

Despite noted endorsements and benefits for earning board certification, nurses also encounter noteworthy barriers. Some reported constraints to pursuing professional development include limited access to training (particularly in rural areas), limited budgets for travel to training sites, and time constraints (Alexander et al., 2008; Griscti & Jacono, 2006; Karaman, 2011; Thompson, 2012). In Washington State alone, 31 of the 39 counties are considered rural (Washington State Office of Financial Management, 2012). In a study by Tilleczek, Pong, and Caty (2005), nurses were surveyed to identify barriers to professional development; the top two barriers were distance to travel and expense of travel.

With respect to occupational health nursing board certification, conventional preparatory courses entail meeting in person over multiple days. Currently, to the authors' knowledge, no hybrid online and classroom occupational health nursing overview course is available. Hybrid courses are designed to blend traditional classroom and either synchronous or asynchronous online learning. Tilleczek et al. (2005) recommended the creation of professional development courses that include various learning styles and available technologies. Karaman (2011) stated, "Nurses working in small-scale health centers may be a priority when designing online nursing programs, as they are the group most inclined to use online education" (p. 5). Hybrid learning can be a solution to occupational health nurses' inability to attend board certification preparatory courses, while creating opportunities conducive to enrollment and appropriate for various learning styles.

Demand for and Development of a Hybrid Online and Classroom Overview Course

Practicing occupational health nurses in the northwest United States, particularly those in Washington State, expressed a desire to participate in an occupational health nursing certification overview course. Niebuhr and Biel (2007) encouraged specialty nursing boards and higher educational institutions to increase access to certification and decrease barriers. This call was responded to by the University of Washington Northwest Center for Occupational Health and Safety, a regional Education and Research Center funded by the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, to develop an accessible occupational health nursing overview course. The purpose of this course (see Table 1) was to provide an overview of topic and content areas for nurses

considering a career change, an opportunity to refresh practicing occupational health nurses' knowledge base, and preparation for the ABOHN certification examination.

This hybrid course consisted of a series of asynchronous online modules (see Table 2) for participants to complete over a 1-month period. An additional synchronous live session was also developed, which participants could either attend in person or via the Internet. This hybrid format could reach participants near and far whose schedules prohibited attending a conventional, multi-day classroom review course. Accordingly, this format increases access for occupational health nurses throughout Federal Region X (Alaska, Idaho, Oregon, and Washington), which is principally served by the Northwest Center for Occupational Health and Safety, and potentially occupational health nurses nationwide or worldwide.

The occupational health nursing overview course consisted of 10 online asynchronous modules, each including a narrated PowerPoint lecture and accompanying readings or resources. The American Association of Occupational Health Nurses (AAOHN) Core Curriculum (3rd edition) served as a framework for the course. This edition of the Core Curriculum (Salazar, 2006) provided a comprehensive outline of occupational health nursing practice considerations and topics to assist occupational health nurses develop their understanding of the field. Each course module reflected a section of the Core Curriculum, and was delivered by experienced, practicing occupational health nurses. Aligning the modules with the Core Curriculum ensured that the overview course offered a comprehensive review of current occupational health nursing practice.

Each module included five components: (a) "initial thoughts" and resources (see the explanation below), (b) narrated lecture, (c) "self-assessment" questions (completed after viewing the narrated lecture), (d) multi-participant discussion board, and (e) evaluation survey. One particular module included an additional quiz and periodic knowledge checks.

The "initial thoughts" component consisted of a short case scenario and three to four questions designed to trigger and assess participants' preliminary thoughts, previous experiences, or degree of understanding of a given topic area before viewing a narrated lecture presentation. A list of resources (e.g., government or organization reports, research articles, or websites) relevant to each module was also provided to enhance participants' knowledge. After participants posted their "initial thoughts" responses, they were directed to a web link for the pre-recorded narrated lecture. Once this lecture was viewed in its entirety, participants completed "self-assessment" questions. Some questions were intentionally similar to "initial thoughts" questions to highlight the information presented in the module. To facilitate active learning, self-assessment and "knowledge check" opportunities stimulated recall and retention of newly learned information. These strategies also served as personal evaluations of content mastery and provided instructors' evaluations of participants' comprehension and module effectiveness (Billings & Rowles, 2001; DuHamel et al., 2011; Reviriego et al., 2014; Taylor et al., 2013). An asynchronous discussion board, accessible by all participants, provided a platform for participants to share thoughts with one another, as well as pose questions and offer answers, connect and network with classmates, and communicate with course facilitators. Carroll, Booth, Papaioannou, Sutton, and Wong (2009) suggested that ". . . communication, especially among the students themselves" (p.

236), can be a significant aspect of the learning environment. Finally, completion of a brief evaluation survey for each module was included to assess the degree to which participants' learning goals and stated course objectives were met, as well as participants' satisfaction with the content.

Following a 4-week period during which participants completed the 10 asynchronous modules, a live 1-day session was held. For this session, participants received a review of the 10 online modules and an additional five modules delivered live, in person or via the Internet. The additional five modules covered health promotion, psychosocial factors in the occupational health setting, principles of adult education, de-escalation training (non-coercive, verbal approaches in potentially dangerous or threatening situations to prevent individuals from causing harm to others or themselves), professionalism, and research. These topics were chosen from additional areas in the AAOHN Core Curriculum, the planning committee's expertise regarding relevant topics for current occupational health nursing practice, and expertise of available speakers. These live modules were offered primarily to assess participant preference for method of content delivery (i.e., online, asynchronously in isolation vs. synchronously live in a group). Attending in person further facilitated networking and enhanced the experience for participants who learn better in a classroom rather than online. Tilleczek et al. (2005) asserted that ". . . face-to-face learning and networking" (p. 158) are key components of professional development. However, Ousey and Roberts (2013) stated that consideration must be paid to various learning styles of potential students when constructing a professional development course.

Each asynchronous module was approximately 1 hour in duration, and 7 hours were allotted to the live session. Upon completion of the entire course, participants were awarded 17 continuing education units. Participants also completed an end-of-course evaluation in which they rated their satisfaction with the course, teaching methods, communication, and ease of technical navigation. This end-of-course evaluation also included a participant self-assessment of confidence in skill performance and competencies addressed throughout the course.

Rationale for Hybrid Format

The overview course was structured as a hybrid to meet the need of the participants with variable schedules and busy lives. Hybrid courses give learners control of the pace of their learning, allowing time to review as needed. Many nurses are turning to web-based learning due to accessibility (Khatony, Nayery, Ahmadi, Haghani, & Vehvilainen-Julkunen, 2009). Karaman (2011) stated that ". . . academic achievement, socialization, and mentoring opportunities are comparable or improved by using online education" (p. 2). Keeping various learning styles in mind, a hybrid approach was chosen.

Designers of the overview course considered several factors when choosing the hybrid format. First, hybrid formats can be cost-effective, given fewer overhead costs for the educational institution and reduced travel costs for participants. Second, delivering content through online modules that participants can access individually at any time of day allows participants the freedom to learn and complete knowledge checks at their own pace (Billings

& Rowles, 2001; Tilleczek, et al., 2005). Current literature also indicates that effective teaching approaches using a "blended method," where online and classroom experiences are combined, benefit learners regardless of learning styles (Billings & Rowles, 2001; Tilleczek et al., 2005). A hybrid continuing education course for public health nurses included online modules with a classroom session. Participants reported that the Internet-based lectures and classroom exercise improved their learning (Alexander et al., 2008). Emerging research shows that this approach produces relatively equal or better learning results compared with traditional classroom learning.

Additional Considerations

Given the objective of creating an overview course accessible to participants across a multi-state region, an online learning management system was used. Although a variety of online learning management systems is available, this system was supported by the academic institution where the planning committee and course faculty were principally based. The features of the online learning management system used for this project that were most helpful, particularly for the asynchronous modules, included restricted, secure access; ability to create and assign unique passwords for participants; a range of "tools" to capture the various module components (e.g., open field text boxes to record individual participant's "initial thoughts," ability to upload large recorded lecture files, group discussion boards, and integration of test/quiz-type questions); and date/time stamping of participant use and completion.

An additional software application, compatible with the online learning management system, was needed to record narrated lectures. Useful features of this application were the ability to start and stop recording without losing previously recorded content (which allowed speakers to take a break), time stamping of content to allow tracking of specific content or keywords, and editing capacity without having to re-record in entirety. Also, the same application allowed some occupational health nurses to participate in the live, synchronous sessions from a distance without traveling to the class location. Two-way synchronous visual communication was available using a webcam. Considerable time and effort were required to orient and train speakers, as well as participants, to interface with this software application. Accordingly, technical staff support was critical to ensure successful use.

Another consideration was fiscal resources needed to support this endeavor. Funding was drawn from multiple sources, principally from the University of Washington Northwest Center for Occupational Health and Safety, to pay the majority of staff time for coordination and technical support and speaker honoraria. Added cost considerations were time and effort contributed in kind by faculty and some speakers to respond to participants' online discussions and questions, as well as from graduate occupational health nursing students who assisted with logistic and administrative support in exchange for academic credit. No costs were incurred for the actual online learning management system because the system was already available through academic institution affiliation. Given the multiple funding sources, calculating an overall cost estimate was difficult. However, it is clear that the resources needed for this project were not trivial, the most significant being personnel time.

Finally, as a pilot demonstration project, revenue was not generated (i.e., through a registration fee); however, to continue the project, revenue will be a consideration.

Next Steps

As with any effective program, evaluation is integral (Jackson & Arnold, 2012); evaluation of the overview course will be conducted using survey methods. Data on participant satisfaction, suggestions for improvement, process and content evaluation, reaction to module content, and overall effectiveness of the course will be collected from participants. Results and findings will be forthcoming. Because a principle objective of the course was to increase the number of board-certified occupational health nurses in the state and region, participants will be asked whether they plan to take the Certified Occupational Health Nurse–Specialist (COHN-S) or the Certified Occupational Health Nurse (COHN) examination after completion of the course. Ideally, data on examination pass rates will also be collected to evaluate course effectiveness. With feedback from participants, module content and the overall pedagogical approach will be refined to better prepare participants for the ABOHN certification examination.

With future iterations of the occupational health nursing overview course, refinements and alterations in delivery method and approaches will be implemented. In particular, evaluation data will guide and inform improvements and respond to participant preferences (Dunet, Reyes, Grossniklaus, Volansky, & Blanck, 2008). The goal of the hybrid learning approach is to include those beneficial aspects of traditional classroom and online learning methods (Tilleczek et al., 2005). An element of the traditional classroom format that remains fundamental for adult learning is the physical presence of and potential for instant feedback from the instructor. Images were not available in the asynchronous portion of the overview course. One possible improvement to the current version of the course could be the incorporation of a video-recording of each module speaker. Another key aspect of hybrid learning, educators offering support and feedback, could be provided by content speakers or course organizers responding to questions from participants.

Conclusion

The occupational health nursing overview course was developed to build on efforts by the University of Washington Northwest Center for Occupational Health and Safety to deliver innovative programs that meet the needs of the occupational health nursing community throughout Washington State and Federal Region X. Capitalizing on the benefits and practicalities of hybrid learning approaches, the course offers an accessible means to increase the number of board-certified occupational health nurses. Considering the many challenges and restrictions that practicing occupational health nurses encounter when seeking continuing education opportunities, such non-traditional methods that facilitate continued professional development are needed so that they are best prepared to provide high-quality, competent care to today's workforce.

Acknowledgments

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Biographies

A. B. de Castro is an Associate Professor with the School of Nursing and Health Studies at the University of Washington Bothell. He also serves as Director of the Occupational Health Nursing Program in the School of Nursing and the School of Public Health at the University of Washington (Seattle).

Erin Shapleigh is a Master of Nursing graduate from the Occupational Health Nursing Program at the School of Nursing, University of Washington (Seattle).

Annie Bruck is a part-time Lecturer with the School of Nursing and Health Studies at the University of Washington Bothell. She also previously served as Assistant Director of the Occupational Health Nursing Program in the School of Nursing at the University of Washington (Seattle).

Mary K. Salazar is Professor Emeritus and former Director of the Occupational Health Nursing Program in the School of Nursing at the University of Washington (Seattle).

Table 1

Occupational Health Nursing Overview Course Objectives

At the conclusion of this course, participants should be able to:
1. Describe how occupational health nursing differs from other nursing specialties and practice areas
2. Understand the legal and ethical implications of, and regulations associated with, occupational health nursing practice
3. Articulate how work-related injury and illness affect worker well-being and have implications at the individual, organizational, population, and societal levels
4. Understand the core scientific foundations of occupational health nursing practice
5. Discuss the core principles of leadership and management in occupational health nursing practice
6. Describe best practices associated with program planning, implementation, and evaluation as applied in the occupational health setting
7. Describe fundamental components and regulations applicable to select occupational health programs
8. Describe key approaches to preparing for the COHN/COHN-S certification exam
9. Describe the multi-tiered psychosocial factors and risks in the work setting
10. Demonstrate two de-escalation techniques
11. List three key best practices to facilitate adult learning and wellness programs

Note. COHN = Certified Occupational Health Nurse; COHN-S = Certified Occupational Health Nurse–Specialist.

Table 2

List of Module Content for OHN Overview Course

Module	Title
1	Occupational and environmental health nursing: An overview
2	Legal and ethical issues in occupational and environmental health nursing
3	Workers' compensation: Treating patients with occupational injuries and illnesses
4	Disability and case management
5	Scientific foundations of occupational and environmental health nursing practice
6	Principles of leadership and management
7	Developing, implementing, and evaluating comprehensive occupational health and safety programs
8	Direct care in the occupational health setting
9	Examples of occupational health programs: Risk management and ergonomics
10	Test-taking strategies for ABOHN certification
In-person modules	Recap of online modules Health promotion Psychosocial factors in the occupational health setting Principles of adult education De-escalation training Professionalism and research

Note. OHN = occupational health nursing; ABOHN = American Board for Occupational Health Nurses.