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Development and Implementation of a Health Behavioral Counseling Curriculum for Physician Assistant Cancer Education

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Abstract

A health behavioral counseling curriculum grounded in Motivational Interviewing and the Transtheoretical Model of behavior change was developed to enhance knowledge and clinical skill among physician assistant (PA) students in managing cancer risk behaviors. A literature and curriculum review informed course content, teaching strategies, and learning activities. The course was evaluated over two pilot years. Students demonstrated increased knowledge and skills regarding the basic principles of the intervention models. The course was integrated into the pre-clinical year of PA training and will be disseminated, beginning with a faculty development workshop for all PA training programs in Texas, USA.

Keywords

Intervention models; Health behavioral counseling; Motivational interviewing

Introduction

Health behavioral risks contribute to nearly all of the 28 focus areas identified by Healthy People 2010 [1] and underlie the major causes of morbidity and mortality in the United States (U.S.). Despite recommendations of the U.S. Preventive Services Task Force [2], behavioral counseling intervention rates fall far below national targets [3], including counseling regarding cancer-related health risks by medical providers [4]. Although patient-centered care is the current vision of health care, provider training and adoption of this approach is lagging in the U.S. [5] and elsewhere [6]. It is clear that healthcare professionals must be specifically trained in strategies to support and guide patients and families in behavior management [7,8].

As physician assistants (PAs) play ever-increasing roles in cancer prevention and control, they are expected to identify risk factors, stratify risk, and assist patients to modify behaviors that increase risk of cancer. The directors of PA programs nationally endorse strengthening instruction on cancer management [9], and effective training is needed in how best to effect behavior change with specific patient populations and with individual patients [10–15]. This article describes such an instructional effort: the modification of an existing PA course in Health Behavioral Counseling (HBC) to address behavioral risks for cancer.

Transtheoretical Model of Change and Motivational Interviewing

The Transtheoretical Model of Change (TTM) [16–18] and Motivational Interviewing (MI) adapted for healthcare [19–23] have been promoted as critical components in the practice

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repertoire of all primary care providers [24] to address health risk for cancer and other health conditions. MI has been proposed for use by both medical and behavioral health practitioners [25–28] and for healthcare applications in medical and public health settings [21,27,29–32], where it has been found to reduce risks of a wide range of health problems [33]. While MI has been piloted in the training of general practitioners [34], medical students [35–38] and pharmacy students [39] and practicing PAs have been trained in MI and TTM [40]; PA programs have not incorporated these approaches.

TTM posits that individuals naturally move through stages of behavior change: (1) pre-contemplation, (2) contemplation, (3) planning and preparation, (4) action, and 5) maintenance, which may be disrupted by behavioral lapses, suggesting a sixth stage: relapse or recycle [16–18]. Practitioners who understand this continuum can better assess a patient's readiness to change a behavior at a particular point in time in the context of the patient's social and cultural influences and personal values. Further, TTM can guide the practitioner to employ communication strategies targeted to facilitate the ambivalent patient's advancement along the continuum.

The “Spirit of MI” embodies three components represented by the acronym “ACE”: (1) respect for patient “Autonomy” in determining health goals and behavior practices; (2) “Collaboration” with the patient and family in selecting and implementing treatment plans; and (3) “Evocation” from the patient of his or her understanding of the applicable health conditions and risk behaviors, wishes for particular health outcomes, and readiness, confidence, and commitment to adopting a specific behavior change or health remedy [25,26].

Methods

Design and modification of the extant HBC course occurred as part of the Physician Assistant Cancer Education (PACE) project funded by the National Cancer Institute (NCI) [41]. PACE aims to improve the quantity and quality of educational experiences in PA training programs that target cancer prevention and control. As an initial step, Fasser et al. [42] identified and refined 26 knowledge, skill, and attitude competencies to measure student self-efficacy for cancer risk assessment and management. Counseling-specific cancer-related competencies (Table 1) include the assessment of patient readiness for behavioral change and the use of an MI style, in addition to core interviewing skills traditionally taught in PA programs. HBC curricular activities were designed to address both the PA core competencies and the cancer-related competencies that focus on behavioral risk identification, prevention, and management.

HBC Curriculum Development

Clarification of the HBC course structure, content and instructional strategies progressed in a step-wise fashion. Literature review informed the selection of a behavior change model, formation of instructional objectives (Table 2), identification of evaluation questions, selection of teaching strategies and learning activities, development of assessment measures, and content mapping to other pre-clinical courses. HBC coursework was designed to complement other pre-clinical coursework that focused upon basic communication skills in medical practice [43].

Instructional Philosophy

As conceptualized for this course, counseling for health behavior change is theory-driven and empirically supported and incorporates attitudes and communication skills applicable when the desired outcome is to effect behavior change. Students are advised to shift into behavioral counseling mode when the consultation addresses patient-directed behaviors. The cornerstone of the course rests upon the development of skills in assessing patient readiness to change

health risks, employing the TTM stages, and intentionally implementing the MI approach adapted for a healthcare setting. The desired outcome is the integration of counseling skills into traditional history taking and patient interactions in order to encourage patients to adhere to mutually agreed treatment regimens and management plans.

Course Structure

The course begins with instruction on theories of health behavior change at the public health and individual level to engage student receptivity to learn effective communication strategies to assess cancer risk behaviors and facilitate change. Next, the emphasis shifts to specific models and techniques to address health behavior change. Finally, skills practice in simulated clinical situations cements skills while student presentations demonstrate integration of new knowledge and skills.

Prior to the advent of PACE, HBC was taught at BCM the last 2 months of the pre-clinical year. In contrast, the revised course initially spanned the pre-clinical year, but students reported difficulty maintaining continuity with course content. The next year, HBC was “front-loaded” to be completed in the first 6 months of training. The latter approach stressed the importance of patient communications early in training and maintained greater coherence across time. A Clinical Psychologist (first author), trained in the use of MI adapted for healthcare providers, taught the course in 12 sessions of either 1.5 h (lectures, discussions of readings, brief demonstrations, and practice) or 3 h (workshop format for focused skills practice, individualized feedback, and student presentations) duration, across 25.5 h of class time.

Teaching Methods

Training healthcare professionals in behavior change skills is itself a behavior change intervention and should be compatible with the principles being taught [22]. As such, the teaching approach illustrated the spirit of MI, creating opportunities for personal reflection and graduated opportunities for practice of new behaviors. Traditional lectures were interspersed with guided discussions of readings, training videotapes [44], demonstrations, and direct feedback in response to simulated clinical application.

Learning Methods

Student activities included role-play exercises, student presentations, performance coding, readings, and “Reflection Journals.” In journals, students: (1) critiqued their ability to listen effectively in their personal lives; (2) identified personal barriers to hearing patients accurately and methods to monitor such barriers in their ongoing self-improvement plan; and (3) attended a support group for persons afflicted with a health impairment or addiction and then described personal impressions of the elements they observed of behavior change theory, styles and skills of behavioral counseling, and readiness to effect change.

Small student groups were formed to optimize personal comfort when practicing newly acquired skills in activities drawn from the instructor's training in individual and group process and resources compiled by MI trainers [45–47]. In group presentations, students enacted PA and patient roles, demonstrating behavior counseling skills, cancer risk behaviors, and varying stages of change. Through role-play and discussion, students applied skills and integrated knowledge about cancer conditions and communication skills.

Students read three print documents. The NCI monograph Theory at a Glance: A Guide for Health Promotion Practice [48] introduced the theoretical foundations of behavior change in public health and behavioral change models including TTM [18]; sponsorship by NCI underscored the relevance of these theories to patient behaviors affecting cancer prevention and management. Motivational Interviewing in Health Care: Helping Patients Change

Behavior [23] described how to bring the spirit of MI into everyday practice. The Motivational Interviewing Treatment Integrity (MITI) coding manual [49,50] highlighted the elements of communication endorsed by the MI model and helped students learn the importance of adherence to an intervention protocol as intended by its developer.

Student and Course Performance Assessment

Performance assessment addressed four major questions: (1) Could the HBC course be designed to complement other curriculum elements of the PA Program?; (2) Would students demonstrate HBC knowledge, skills, and attitudes by the end of the course?; (3) Could students affect counseling strategies that go beyond advice giving to employ specific strategies matched to patients' readiness to make behavioral lifestyle changes?; (4) Could mental health professionals function as standardized patients (SPs) and provide detailed personalized feedback to students regarding their counseling skills and attitudes?

Written exams assessed students' knowledge of theories and concepts, while group projects revealed understanding of specific cancer risk behaviors and counseling strategies. Skills acquisition was measured through scripts that students drafted to demonstrate: assessment of a patient's stage of readiness to change a behavior, responses customized to each stage of change, and contrasts between prescriptive approaches and patient-centered interventions using HBC concepts and skills. In written exams, students also coded and critiqued standardized counseling scripts using concepts taught in the course and revised questionable PA responses to better emulate the MI model. In both pilot years, behavioral counseling skills were further assessed using SP exams, in which SPs enacted cancer histories and behavioral risks. In the second year, mental health professionals were trained as SPs to assess student use of MI skills adapted for healthcare and provide direct feedback. Students wrote essays that revealed their thinking processes and ability to apply course concepts to the SP encounter. Student attitudes concerning the application of effective listening strategies to clinical and personal experiences were assessed through the SP exam and the three Reflection Journals.

Student self-confidence to address behavioral risks in their patients and knowledge of concepts taught in the course were assessed with a brief pre- and post-test instrument. Finally, the course was evaluated with formative reviews by faculty, by student comments solicited during and after the course, and by anecdotal reports from SPs who witnessed student skills.

Results

Assessment involved a pre- and post-design. Students who took the revised HBC class in 2007 (Y1) or 2008 (Y2) completed an instrument adapted from Poirier et al. [38]. Eight items pertained to self-confidence in interactions with patients, including consultations about health risk behaviors; students responded on a 5-point Likert-type scale from "very confident" to "very not confident." Four multiple-choice items assessed knowledge about basic MI and what types of responses are recommended to help patients progress along the readiness continuum described by TTM.

Pre-test data were collected in the first or second class each year (Time 1: T1) and post-test data were collected following the final exam (Time 2: T2); T2 occurred in the 12th month of Y1 and in the sixth month of Y2. Students were allowed to create a code name or number to allow matching across time and were informed that responses would be scored anonymously and would not affect grading. Code names and numbers were separated from the data after matching T1 and T2 forms were assembled. In Y1, the T2 forms were returned electronically as email attachments, which compromised anonymity; all other administrations were conducted in class.

From the 35 students in Y1, five T1 and T2 pairs could not be matched either because the same code was not used or because the student did not submit T1 or T2 data. Further, one student withdrew from the PA Program and did not complete the course, leaving data from 29 Y1 students for analysis. In Y2, two of 35 students withdrew from the program; pre- and post-tests from the remaining 33 students were matched. Examination of the raw data revealed invalid T2 responses from one student, thus leaving data from 32 Y2 students available for analysis.

Confidence

Mean self-confidence ratings for each item across time were subject to *t* test comparisons for paired samples for each pilot year. Results are shown by year in Table 3 for each item and for the summary self-confidence rating across all eight items. Significant increases across time were found for seven of eight items in Y1, and for the summary of ratings across all eight items; no difference was found for Y1 students on the item assessing confidence to express empathy and reflect patient emotions (item three). Significant increases across time were found for all eight items and for the summary of ratings across all eight items in Y2 (Table 3).

Knowledge

Table 4 shows the percent of students each year who correctly answered each knowledge item at T1 and T2. In Y1, the percent correct increased significantly on item 1 and decreased significantly on item 3; no change was found on items 2 or 4 or for the percent correct across all four items. In Y2, the percent correct increased significantly from T1 to T2 on items 1, 2, and 4 and on the overall total across the four items; item 3 showed no change (Table 4).

Formative Evaluation

PA Program faculty reported that HBC supplemented and complemented other coursework; students reported using knowledge about stages of change and health behavioral counseling during other pre-clinical courses and later in clinic settings. In Y1, students cited difficulty maintaining continuity; no such comments were made in Y2 when the class sessions spanned the first 6 months of the pre-clinical year. In both years, students recognized the importance of developing effective skills to communicate accurately with patients and to facilitate their patients' movement toward healthier lifestyles and behaviors. They favored class demonstrations and practice over lectures, readings, and written work and found the workload out-of-class to be arduous during their demanding pre-clinical year; nevertheless, favorable comments were submitted about each learning method. Students especially enjoyed the Reflective Journal field project to attend a patient support group. Some students suggested that incorporating practicing PAs into the course as speakers would foster discussion of the functional implementation of these communication strategies in clinical settings. Both years, students reported that they enjoyed and benefited from the SP encounters. In Y2, mental health professionals trained as SPs reported that they easily incorporated the roles of enacting a patient, observing student behaviors, and providing individualized feedback to students. Several students in Y2 requested an additional SP encounter early in the course, not only to desensitize them to the exam procedure but also as an additional learning experience.

Discussion

The revised HBC course was successfully implemented in conjunction with other pre-clinical courses of the PA program curriculum. The condensed schedule in the second pilot year was better received and produced improved outcomes. Students demonstrated knowledge and skills associated with core competencies in interpersonal and communication skills and in patient care—specifically behavioral counseling skills—in other pre-clinical classes, but needed more exposure to practical application in their roles as PAs in clinical settings.

PA students reported increased confidence using patient-centered approaches except in expressing empathy. Empathy is likely to be a core personal value among prospective PAs. When students learned that emotional reflection is a complex multilayered interactional skill, they may have adopted a more realistic self-assessment of their confidence to use it skillfully. The SP encounters helped students appreciate what they did not yet know about the use of health behavior counseling skills and a patient-centered approach, which might be a benefit from the use of mental health professionals as SPs.

The four-question pre- and post-test knowledge assessment detected no overall change in Y1 students, although there was an increase in their ability to identify basic core elements of the MI model. Y1 students struggled with continuity due to the distribution of classes across a full year, which might have compromised their command of more focused MI concepts. In contrast, Y2 students showed significant improvement on all knowledge items, suggesting greater coherence in their ability to apply their knowledge to patient interactions.

The study has several limitations, including the lack of a control group, no data from prior years, and the reliance upon brief assessment measures drawn from an outside source that was not specific to this HBC curriculum. Skills assessment was limited to the classroom, as first-year students had not yet used these skills with patients. In the context of the overall aims of PACE, it is a limitation that this evaluation could not assess competencies specific to cancer risk behaviors. While the PA profession has adopted core competencies consistent with patient-centered care and communication [51] and has mandated such skills be taught [52], more work is needed to establish how effectively graduate programs are implementingtrainingsuchasHBC andhow well PAs in practice are implementing the skills.

Based on the results of the study, several strengths of the revised course will be retained. The course will be taught the first 6 months of the program and will retain a variety of teaching methods and learning activities that emphasize the practical limitations, as well as the utility, of behavioral counseling skills by PAs in clinical settings. The course will emphasize practical application, reduce the out-of-class workload, and increase in-class demonstration, practice, and small group activities. Audio- and video-taping learning exercises will incorporate coaching and feedback [53]. Mental health professionals will continue to serve as SPs in videotaped encounters, both early and late in the course, to provide an additional learning experience, to facilitate self-review and individualized feedback, and to assess skill acquisition more objectively.

Conclusion

As part of specialized preparation to provide cancer care, PA students can learn core communication competencies of the profession as well as effective and empirically-supported behavior change strategies that characterize patient-centered care and promote healthy lifestyles. Intentional use of such strategies holds promise for creating “teachable moments” in patient consultations to promote health behaviors [54]. These strategies are especially critical in primary care and oncological settings, where PAs increasingly fulfill vital roles as members of the cancer management team, promoting prevention and early detection.

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Table 1

PA cancer counseling competencies[a]

Cancer Risk Identification
• Categorize readiness for behavior change according to the transtheoretical model
• Demonstrate primary behaviors that characterize the motivational interviewing style
Cancer Risk Prevention
• Elicit environmental factors that place someone at increased risk of cancer
• Elicit lifestyle factors that place someone at increased risk of cancer
• Elicit family factors that place someone at increased risk of cancer
• Counsel patients regarding the importance of screening
• Counsel patients regarding lifestyle behaviors that can help prevent cancer
• Use communication strategies that reduce patient resistance
Cancer Risk Management
• Identify cultural issues that impact cancer management

[a]Data from Fasser CE, Spence LR, Young C, et al. [42]

Table 2

Instructional objectives for health behavioral counseling course

Knowledge Objectives
• Describe the relationship between the methods and principles of motivational interviewing and health behavioral counseling
• Articulate the practitioner's role in the utilization of active, brief and effective counseling strategies for behavior change
• Describe the motivational processes that promote empowerment within diverse and at-risk populations
Skill Objectives
• Exhibit listening skills that facilitate alliance development and behavior change
• Exhibit proficiency in assessing patient's risk-based problem
• Determine patient's readiness, willingness, and ability to make behavioral changes
• Recognize patient-based resistance and barriers to change while exploring solutions for problem resolution
• Select activities designed to strengthen patient's motivation to change
• Choose activities to assist patient maintain chosen course of health behavior change
• Match intervention level with patient readiness to change using evidence-based information
Attitudinal Objectives
• Acknowledge that potential value conflicts may occur when working with diverse patient populations
• Demonstrate behavior consistent with providing compassionate care to patients with problematic health behaviors at all stages of readiness to change
• Create a safe and respectful counseling environment that supports patient self-efficacy
• Engage in continual self-assessment of progress as a practitioner of health behavioral counseling

Table 3

Comparison of pre- and post-test self-confidence means for students in Y1 and Y2

Item	Means (reverse scored: 1 to 5)					
	Y1 (*N*=29)			Y2 (*N*=32)		
	T1	T2	*t* (28)[a]	T1	T2	*t* (31)[a]
1	1.76	1.24	4.05, $p<0.001$	1.81	1.09	4.82, $p<0.001$
2	2.00	1.55	2.65, $p<0.01$	2.00	1.34	4.74, $p<0.001$
3	1.66	1.59	0.49, NS	1.87	1.47	2.43, $p<0.05$
4	3.24	2.17	6.83, $p<0.001$	2.97	1.37	9.12, $p<0.001$
5	3.38	1.79	9.03, $p<0.001$	3.50	1.41	10.93, $p<0.001$
6	3.34	2.34	5.39, $p<0.001$	3.47	1.75	8.17, $p<0.001$
7	3.31	2.48	4.30, $p<0.001$	3.28	1.94	7.17, $p<0.001$
8	2.86	2.28	3.34, $p<0.01$	2.75	1.69	6.31, $p<0.001$
Overall	2.67	1.93	7.65, $p<0.001$	2.71	1.51	10.99, $p<0.001$

[a] *t* tests for paired samples (two-tailed *p* values)

Table 4

Comparison of percentage of students answering each knowledge item correctly at pre- and post-test in Y1 and Y2

Item	Percentage of students answering correctly					
	Year 1 (*N*=29)			Year 2 (*N*=32)		
	T1	T2	*t* (28)[a]	T1	T2	*t* (31)[a]
1	20.7%	62.1%	–3.55, $p<0.01$	12.5%	50.0%	–3.21, $p<0.01$
2	58.6%	51.7%	0.53, NS	50.0%	87.5%	–3.83, $p<0.001$
3	79.3%	55.2%	2.25, $p<0.05$	43.8%	46.9%	–0.25, NS
4	51.7%	48.3%	0.33, NS	46.9%	78.1%	–3.30, $p<0.01$
Overall	52.3%	55.2%	–0.38, NS	38.3%	65.6%	–4.84, $p<0.001$

[a] *t* tests for paired samples (two-tailed *p* values)