



Contents lists available at ScienceDirect

Pain Management Nursing

journal homepage: www.painmanagementnursing.org

Review Article

How Theory Can Help Facilitate Implementing Relaxation as a Complementary Pain Management Approach

Linda H. Eaton, PhD, RN, AOCN^{*}, Jennifer P. Hulett, PhD, APRN, FNP-BC, PPCNP-BC[†], Dale J. Langford, PhD[‡], Ardith Z. Doorenbos, PhD, RN, FAAN[§]^{*} School of Nursing & Health Studies, University of Washington Bothell, Bothell, Washington[†] College of Nursing, University of South Carolina, Columbia, South Carolina[‡] School of Medicine, University of Washington, Seattle, Washington[§] College of Nursing, University of Illinois at Chicago, Chicago, Illinois

ARTICLE INFO

Article history:

Received 1 June 2018

Received in revised form

29 October 2018

Accepted 14 December 2018

ABSTRACT

Complementary therapies provide cancer survivors and clinicians with options for managing chronic pain. Recent published clinical guidelines and research findings support the use of relaxation therapy for managing chronic pain in cancer survivors. However, translating research findings into clinical practice remains a challenge. Using theory to guide implementation of a new practice can increase the likelihood of successful adoption. This article uses relaxation therapy for cancer survivors to describe how clinicians could use Rogers' Diffusion of Innovation Theory and the related Collaborative Research Utilization Model to implement a complementary therapy and ensure that it becomes standard practice.

© 2019 American Society for Pain Management Nursing. Published by Elsevier Inc. All rights reserved.

Managing chronic pain in cancer survivors is challenging. Clinicians often rely on pain medication, which can cause side effects that reduce quality of life (Nafziger & Barkin, 2018). Complementary therapies such as relaxation therapy and other mind-body practices provide cancer survivors and clinicians with options for managing chronic pain. A meta-analysis of research findings from 152 studies (>65,000 cancer patients) suggests that the prevalence of complementary therapy use among cancer patients worldwide is 40%, with the highest prevalence of 50% in the United States based on findings from 48 studies (Horneber, et al, 2012).

Implementing a practice change across health care organizations is not easy. Research shows that it takes an average of 17 years before an innovation supported by evidence reaches 50% adoption in clinical practice (Balas & Boren, 2000). Integrating new evidence-based complementary therapies into standard patient care requires institutional support, careful planning, and effective implementation. Using theory as a framework for planning and implementing such a change can help clinicians successfully adopt the change in practice as well as facilitate evaluation and management of the new practice.

This article describes how clinicians could use Rogers' (1962) Diffusion of Innovations Theory and the related Collaborative Research Utilization Model (Dufault, 1995) to guide successful implementation of relaxation therapy—an evidence-based mind-body intervention—as a standard care option for cancer survivors with chronic pain.

Cancer Survivors and Chronic Pain Management

Many of the over 15.5 million American cancer survivors (Miller et al., 2016) continue to suffer from the negative effects of cancer long after they complete treatment. A recent meta-analysis (van den Beuken-van Everdingen et al., 2016) found that approximately 39% of 18,832 cancer survivors experienced chronic pain after completing treatment, and up to 10% of cancer survivors had severe pain that interfered with function years after treatment had ended. Chronic pain can be related to the survivor's type of cancer, level of invasiveness, and past cancer treatments; the time elapsed since the survivor completed treatment; or comorbidities such as degenerative arthritis, diabetic neuropathy, and fibromyalgia (Green et al., 2011; Levy et al., 2008; Moryl et al., 2010; van den Beuken-van Everdingen, 2012).

Managing this pain can be difficult. Chronic pain in cancer survivors is often associated with additional symptoms including anxiety, depression, fatigue, and sleep disturbance (Avis, Levine, Marshall & Ip, 2017; Syrjala et al., 2014). Pharmacotherapy is the

Address correspondence to Linda H. Eaton, PhD, RN, AOCN, School of Nursing & Health Studies, University of Washington Bothell, Box 358531, Bothell, WA 98011.
E-mail address: lineaton@uw.edu (L.H. Eaton).

most common approach to chronic pain management, but relying on medication for pain relief is not the best approach for all cancer survivors particularly for those who require opioid-based medications. Many survivors on long-term opioid therapy no longer find adequate pain relief (Glare et al., 2014). In addition, survivors and their families may be concerned about using opioid-based medications for pain relief in the context of the public health crisis resulting from overprescribing of opioids (Ballantyne, 2017).

Some patients with chronic pain benefit from opioid analgesics, but there is little scientific evidence of their long-term safety and effectiveness. Options, such as complementary therapies, are critical to effectively manage chronic pain. Comprehensive pain management integrates the best of conventional therapy, such as prescription medications, with evidence-based complementary therapies (Duensing, 2016).

Complementary Therapies

Many complementary therapies are being used to manage symptoms related to cancer and cancer treatment. These therapies can be used along with pain medications, or depending on patient preference, as a standalone pain management strategy.

Mind-body therapies that can be used for pain management focus on the interaction between the mind, body, and behavior. Examples include relaxation therapies, acupuncture, massage therapy, meditation, music, and yoga (Elkins, Fisher & Johnson, 2010; National Center for Complementary and Integrative Health [NCCIH], 2018a). These interventions can improve physical and psychological symptoms and increase well-being in patients with cancer-related pain (Bardia, Barton, Prokop, Bauer & Moynihan, 2006; Kwekkeboom, Cherwin, Lee, & Wanta, 2010).

Massage, music, and hypnosis have been shown to reduce post-surgical pain in women with breast cancer. Evidence from three randomized controlled trials (Fernandez-Lao et al., 2012; Li et al., 2011; Montgomery et al., 2007) with sample sizes ranging from 44–200 were assigned a Grade C by the Society for Integrative Oncology Guidelines Working Group (Greenlee et al., 2014). Grading was based on a modified version of the U.S. Preventive Services Task Force grading system (U.S. Preventive Services Task Force, 2018). A Grade A means there is high certainty that the intervention is effective based on evidence from a well-designed, well-conducted study while a Grade C means moderate certainty that the benefit is small and the decision to use these therapies should be based on the clinician's judgment and patient preference (Greenlee et al., 2014).

Individuals can implement many complementary therapies themselves, with no prescription required. Mind-body therapies in particular empower individuals to actively participate in managing their symptoms. These approaches are usually low cost and may have beneficial effects on multiple symptoms at once, such as pain, anxiety, sleep disturbance, and depression. Fouladbakhsh and Stommel (2010) showed in their analysis of the 2002 National Health Interview Survey data that survivors (N = 2,262) of breast, prostate, colon, myeloma, lymphoma, or lung cancer who experienced pain were also likely to use complementary therapies. The majority of the cancer survivors (both male and female) who used complementary therapies for pain management were more likely to use mind-body therapies such as progressive relaxation (odds ratio [OR] = 2.6, $p < .03$) or deep breathing exercises (OR = 1.9, $p < .002$) than other complementary therapies, such as yoga, tai chi, and meditation (Fouladbakhsh & Stommel, 2010).

Relaxation Therapy

Interventions described as relaxation therapy include some form of relaxation, such as progressive muscle relaxation, guided

imagery, deep breathing, or visualization techniques (NCCIH, 2018b). Relaxation therapy works by minimizing the sympathetic nervous system response, thus lowering oxygen demand, slowing heart rate and respiration, and lowering blood pressure. This results in a feeling of calmness and well-being (NCCIH, 2018b). The physical and mental effects of relaxation may reduce an individual's sensitivity to pain, allow for more restful sleep, and reduce fatigue (Kwekkeboom, et al., 2010).

Relaxation therapy is a psychological approach that requires some cognitive activity, but little physical effort (Kwekkeboom et al., 2010). Relaxation therapy interventions can be used anywhere at any time. They can be delivered by a person or through video, audio, or text. Like other skills, relaxation interventions need practice and it is important that they are used frequently and regularly to help manage chronic pain (NCCIH, 2018c). Adverse effects related to relaxation therapy such as increased anxiety are rare (NCCIH, 2018c).

The recent clinical guideline from the American Society of Clinical Oncology (ASCO) recommended relaxation therapy for chronic pain management in cancer survivors (Paice et al., 2016). The research studies on the effectiveness of relaxation therapy found moderate and significant effects (Johannsen, Farver, Beck, & Zachariae, 2013; Sheinfeld Gorin, 2012), but the guideline recommendation is moderate due to methodological limitations of the research studies, including small sample sizes and short study durations. However, the ASCO guideline concluded that the scientific evidence is promising and the benefits of using relaxation therapy outweigh harmful effects (Paice et al., 2016). The most frequently studied relaxation intervention among cancer patients with solid tumors and hematologic malignancies, was progressive muscle relaxation delivered over three or more training sessions by nurses or massage therapists and facilitated by an audiotape and independent patient practice (Anderson et al., 2006; Hernandez-Reif et al., 2005; Kwekkeboom, Wanta & Bumpus, 2008). The recommendation of the ASCO guideline (2016) supports health care organizations in considering relaxation therapy as a standard patient care practice when caring for cancer survivors with chronic pain.

Theory and Implementation of Changes in Practice

Researchers have found it takes nearly two decades to adopt a new intervention for implementation in clinical practice (Balas & Boren, 2000). Barriers to adopting new interventions exist at the patient, clinician, and system level (Giannitrapani et al., 2017). Patient and clinician-specific barriers include the individuals' personal resistance to change and the belief that complementary therapies will take more time (Giannitrapani et al., 2017). At the systems level, the health care organization may not offer sufficient education for clinicians so they can coach patients on how to use the various interventions or, in some places, leaders and administrators may not support the time needed to deliver complementary therapies (Giannitrapani et al., 2017). When aiming to implement a change in practice, it is important to identify the barriers that might prevent or slow implementation.

Knowledge of how change occurs and the factors that positively and negatively affect the change process are critical to ensuring a successful practice change. Using theory to guide implementation of a particular change in practice can increase the likelihood of success. A theory is composed of interrelated concepts, definitions, and ideas that describe a systematic view of phenomena (Kerlinger and Lee, 2000). Well-designed theories organize existing knowledge and can be used to explain and predict situations or events (Walker & Avant, 2011). Thus, theories can be helpful in planning, implementing, and evaluating a practice change.

social science theory that explains how a new idea, practice, or product is diffused, or spread, throughout a social system. The theory suggests that diffusion of ideas in a social system, such as a health care organization, occurs over time through communication among members of that system. Members initiate such communication in response to learning about an innovation (Dearing & Cox, 2018; Rogers, 2003). Among other components of the theory shown in Figure 1, it describes the roles of the people involved in both influencing and adopting the innovation (Rogers, 2003).

According to the Diffusion of Innovations Theory (Rogers), the process of adopting an innovation involves five steps: (1) awareness of the innovation, (2) development of a favorable or unfavorable attitude toward the innovation, (3) decision to adopt or reject the innovation, (4) implementation of the innovation, and (5) confirmation or reinforcement of the decision (Rogers, 2003).

The theory also establishes five ways that people—or adopters, in the language of the theory—respond to innovations. Understanding these five categories of adopter described in Table 1 helps those who are promoting a change, such as clinicians or administrators who wish to provide relaxation therapy to patients, better understand those who will need to take action to adopt the new practice, such as clinicians. This understanding helps the change agents develop strategies to promote the innovation among the various types of adopters.

For example, early majority adopters accept an innovation in practice before the average person does; late majority adopters wait until the majority has already adopted the innovation (Rogers, 2003). Table 1 shows that success stories and scientific evidence on the innovation's effectiveness will be influential with people who are early majority adopters while the numbers of people who have successfully adopted the innovation will be persuasive for late majority adopters.

The adoption process is strongly influenced by the structure and quality of adopters' social networks (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). These networks consist of friends and colleagues who offer social interaction and personal relationships, and impact the individual's attitudes and behavior (West, Barron, Dowsett, & Newton, 1999). Nurses' professional social networks tend to be formal and vertical compared to physicians' professional networks, which are informal and horizontal (West et al., 1999). Innovations diffuse through horizontal networks by peer influence, while authoritative decisions are more effective for spreading an innovation through vertical networks. Research suggests that nurse leaders are able to influence other nurses because they are in powerful positions embedded in the professional social network (West et al., 1999). Subsequently, nurse leaders may be able to promote nurses' adoption of an innovation

such as relaxation therapy for pain management through their authority and status, but this may not work as well for physicians who practice in a more autonomous role. Peer opinion leaders who have credibility through their work are also important to the adoption process (Greenhalgh et al., 2004).

Finally, for adoption to be successful, the system or organization must be receptive to change and operationally ready for the innovation. Active management within a health care organization is required for a practice change to be adopted and sustained (Gerlich, Phelps & Daniel, 2018). However, external influences can also play a role in supporting or delaying an innovation. For example, political directives that result from the national opioid crisis are external influences that may affect implementation of relaxation therapy and other complementary pain management approaches for cancer survivors.

Figure 1 outlines the elements of the Diffusion of Innovations Theory (Rogers, 1962). This theory works well as a framework for implementing change in a health care organization because it provides evidence-based information about the key components necessary for facilitating adoption of a new practice among a health care team. The theory also suggests that to be successful, an innovation must have advantages over other practices, such as cost and effectiveness, and that these advantages must be acceptable to the adopter's values, norms, and perceived needs (Rogers, 2003). These perceived characteristics of the innovation help to explain different rates of adoption (Rogers, 2003).

Evaluation of the Diffusion of Innovations Theory

How Clear Is the theory?

The diffusion theory's meaning and consistency is maintained throughout the theory. The concepts are logical and the systematic linkages between the theory's concepts are presented in a parsimonious way. Congruency exists between the different components of the theory and there is a good fit between the assumptions and conceptual definitions. The relationships between structure and function are clear with well-founded concepts corresponding accurately with the real world. The consequences of the diffusion of innovations are a less developed element of the theory.

How Simple Is the theory?

The diffusion of innovations is a broad, complex, and longitudinal theory. However, the premise of the theory is simple: innovations are adopted or rejected by individuals or groups through a decision making process. Its complexity is due to the many

Table 1
Adopter Characteristics from the Diffusion of Innovations Theory and Corresponding Communication Strategies

Type of Adopter	Characteristics of Adopter	Preferred Communication Strategies
Innovator	<ul style="list-style-type: none"> • Adventurous risk-taker • Little effort needed to appeal to innovator 	<ul style="list-style-type: none"> • Written information • Group educational session • One-to-one educational session with change agent and innovator
Early Adopter	<ul style="list-style-type: none"> • Opinion leader open to, and aware of the need for, change • Comfortable following through on new ideas 	<ul style="list-style-type: none"> • How-to manuals • Information sheets on implementation
Early Majority Adopter	<ul style="list-style-type: none"> • Rarely a leader but does adopt new ideas before the average person • Generally requires evidence that innovation is effective before adopting it 	<ul style="list-style-type: none"> • Success stories • Scientific evidence of the innovation's effectiveness
Late Majority Adopter	<ul style="list-style-type: none"> • Reluctant to change • Adopts an innovation after it has been adopted by the majority 	<ul style="list-style-type: none"> • Information on how many people have tried and adopted the innovation successfully
Laggard	<ul style="list-style-type: none"> • Very conservative, very reluctant to change • Most challenging group to persuade 	<ul style="list-style-type: none"> • Statistics • Fear appeals • Pressure from people in the other adopter groups

Note. Permission for use of text for this table granted from the authors (Greece, J. A., & LaMorte, W. W. [2018]. Boston University School of Public Health [Greece and LaMorte, 2018]).

potential relationships among the concepts across time. The number of relationships is due to the different attributes of innovations, social systems, and communication channels. The dimensions of each stage of the innovation-decision process add to its complexity.

How General Is the theory?

The diffusion of innovations is a well-tested theory and its theoretical propositions have been scientifically tested (Rogers, 2003). The theory's dissemination is notable given the 5,200 published research reports spanning multiple disciplines over the past 15 years (Rogers, 2003).

How Accessible Is the theory?

Elements of the diffusion of innovations theory that have been empirically validated include earliness of knowing about innovations, rate of adoption of different innovations, innovativeness, diffusion networks, rate of adoption in different social systems, communication channel usage, and consequences of innovation (Rogers, 2003). These findings have been essential in strengthening the theory's propositions and in making modifications to the theory. They have also contributed to the broad definitions of the theory's concepts.

How Important Is the theory?

The Diffusion of Innovations Theory predicts how innovations are adopted or rejected by a social system. It is a well-developed theory with applicability to many disciplines. As a middle-range theory, it is useful to nursing and provides a theoretical framework for studying the adoption or rejection of health care innovations by individuals or groups.

Applying the Theory to Adoption of Relaxation Therapy

How would one use the Diffusion of Innovations Theory (Rogers, 1962) as a framework for adopting relaxation therapy as a pain management approach? The first step is to identify the various components of the theory (see Fig. 1). The second step is to identify the processes and stakeholders within the health care organization who align with each component.

At the most basic level, the key components of the diffusion process are as follows: (1) an innovation, in this case relaxation therapy; (2) the change agent, who is someone with knowledge of or experience in using the innovation; (3) the intended adopter, or the person who will use the innovation; and (4) a communication channel that connects the change agent and the adopter (Rogers, 2003). Communication channel simply means the way in which information passes from one individual to another. This example, explored in more detail below, describes how relaxation therapy for management of chronic pain in cancer survivors can be adopted by and diffused throughout a health care organization.

The Innovation

Relaxation therapy can be delivered in various ways, including video, audio, or clinician implementation. Each organization thus needs to determine which delivery method is most appropriate. If clinician time is extremely limited, providing relaxation therapy in an audio, video, or web-based format may work best. Written text (American Cancer Society, 2018) and downloadable relaxation interventions (Brigham Young University, 2018; Dartmouth, 2018; Inner Health Studio, 2015) are readily available on the Internet. A

variety of mobile applications providing relaxation interventions such as progressive muscle relaxation, controlled breathing, and guided imagery are also available and easily accessible. If caring for cancer survivors in the outpatient setting, these interventions can be downloaded by cancer survivors during their outpatient visit, and they can be instructed to use the intervention at quiet times when they are least likely to be interrupted (Richmond, 2017). Note that the change agent must evaluate the quality of any specific relaxation intervention before recommending it for adoption (Rogers, 2003).

The Change Agent

Change agents for relaxation therapy are individuals who value complementary pain management approaches and know that they are a key element of comprehensive pain management. Change agents want to ensure that these therapies are standard practice when caring for cancer survivors who have chronic pain. The change agent in an organization may be a nurse who provides direct care, an advanced practice nurse who is a primary care provider, or a clinical nurse specialist who works with other clinicians to support evidence-based care. Other members of the health care team can be change agents such as a physical therapist or physician.

Change agents have to follow their organization's protocol for making a practice change. This might include presenting the relaxation therapy approach to the organization's leadership for approval. It may also include making changes in the organization's documents including pain management standards of care, policies, or protocols. These organizational documents are communication channels that will help spread the new practice and are key to promoting adoption of evidence-based pain management interventions among nurses (Eaton, Meins, Mitchell, Voss & Doorenbos, 2015).

The Adopters

The adopters of relaxation therapy are members of the health care team, including nurses, physician assistants, physicians, and physical therapists, who provide direct care to cancer survivors with chronic pain. Clinicians on the team, as adopters, have their own values and beliefs about relaxation therapy. These values and beliefs affect how likely each person is to adopt relaxation therapy into practice.

For that reason, it is important for change agents to learn about adopters' values and beliefs within their organizations and to address any of the adopters' perceived barriers to using relaxation therapy. Change agents can assess readiness for change through a written questionnaire, interviews, or focus groups. This step should be taken before initiating efforts to implement relaxation therapy throughout the organization. The information will help the change agents determine their strategies for implementing and diffusing the change in practice.

The Communication Channels

Education is critical to diffusing complementary pain management approaches among clinicians (Rogers, 2003). Change agents who have identified their adopters can tailor their teaching methods based on the information that is most influential to each adopter category (see Table 1). This will make it more likely that each clinician in the organization will adopt the innovation and change their behavior to include relaxation therapy in their patient care. For example, to facilitate physician adoption of relaxation therapy, a change agent would have peers from the physician's

Table 2
Implementing a Complementary Pain Management Approach Using the Collaborative Research Utilization Model

Six Steps to Moving an Evidence-Based Innovation into Practice	Implementing Relaxation Therapy in a Health Care Organization
<i>Step 1.</i> Conduct a literature search for evidence-based complementary approaches to manage chronic pain in cancer survivors.	Relaxation therapy for managing chronic pain in cancer survivors is supported by two meta-analyses (Johannsen, Farver, Beck, & Zachariae, 2013; Sheinfeld Gorin, 2012) and recommended by the ASCO clinical guidelines (Paice et al., 2016). Thus this step is already complete and step 2 is partially completed.
<i>Step 2.</i> Critically evaluate the scientific literature and determine if the complementary pain management approach is a good fit within the organization.	Assessing how relaxation therapy fits within the organization includes evaluating the adopters' beliefs and values about this pain management approach. This information is necessary to successfully embark on steps 3 and 4 and can be collected through a written questionnaire, interviews, or focus groups. It is expected to take 5–9 months to complete this step (Tracy et al., 2006).
<i>Step 3.</i> Develop evidence-based standards of care, policies, or protocols that incorporate the complementary pain management approach.	Relaxation therapy is added to the organization's standards of care, policies, or protocol. This step is expected to take 2–4 months (Tracy et al., 2006).
<i>Step 4.</i> Implement the standards of care, policies, or protocols, and evaluate the feasibility and effectiveness of the complementary pain management approach.	Implementation includes communicating with adopters about the benefits of relaxation therapy and how to use it, gaining their support and commitment, and evaluating the results of using relaxation therapy with the organization's patients. Evaluation can be done by auditing the clinician's documentation in the electronic health record. This step is projected to take 8–12 months (Tracy et al., 2006).
<i>Step 5.</i> Determine if the standards of care, policies, or protocols should be continued or modified.	The evaluation results collected in step 4 are presented to the organization's leadership and the health care team so that a decision is made to continue using relaxation therapy for patient care, make changes, or discontinue it. It is projected that this step will take 1–2 months (Tracy et al., 2006).
<i>Step 6.</i> Share the organization's experience in implementing a complementary pain management approach with others through publication and conference presentation.	Dissemination of the organization's experience in implementing relaxation therapy is a critical step to diffusing this complementary pain management approach outside the organization.

Modified from Dufault, M. (2004). Testing a collaborative research utilization model to translate best practices in pain management. *Worldviews on Evidence-Based Nursing, Third Quarter Supplement*, S26–S32.

social network share their successful experience in using this intervention to manage chronic pain (Greenhalgh et al., 2004).

Another way to facilitate adoption of relaxation therapy is to use the organization's clinical decision-support systems to cue clinicians. The computerized documentation system can provide a dialogue or dropdown box that reminds clinicians that relaxation therapy is an evidence-based intervention for chronic pain management among cancer survivors. To encourage clinicians who are not comfortable in suggesting or providing the intervention to patients, clinical leaders can coach these clinicians by ensuring opportunities to practice delivery of the intervention with a colleague.

The Timeline

It takes time to move an innovative therapy from idea to research to evidence to standard practice in a health care organization. The Collaborative Research Utilization Model (Dufault, 1995), which is based on the Diffusion of Innovations Theory (Rogers, 1962), was designed in the 1980's by Dufault and colleagues at the University of Rhode Island College of Nursing and Roger Williams Medical Center. The model's goal is to promote clinical research and utilization by clinicians through partnerships between academic and clinical settings. This model provides guidance for planning the steps and estimating the time needed to move a clinical idea from research to practice. The model has been used to translate best practices in pain management and has been applied in at least six previous research studies (Dufault, 2001; Dufault, 2004; Dufault & Sullivan, 1999; Dufault & Willey-Lessne, 1999; Tracy, 2010).

The Collaborative Research Utilization Model (Dufault, 1995) identifies six steps listed in Table 2 that take an innovation from initial research on effectiveness into clinical practice. Table 2 presents a hypothetical example of using the Collaborative Research Utilization Model (Dufault, 1995) to demonstrate an organization's change process intended to ensure that relaxation therapy, if determined effective and a good fit within the organization,

continues to be offered to cancer survivors with chronic pain in the organization.

Conclusions

Complementary therapies are important elements of comprehensive pain management. Mind-body practices such as relaxation therapy are commonly used by cancer survivors to manage pain (Fouladbakhsh & Stommel, 2010). Relaxation therapy is recommended by the ASCO clinical guideline (Paice et al., 2016) and should be considered as standard care in health care organizations that provide chronic pain management for cancer survivors. Yet ensuring adoption of new and innovative therapies into existing clinical practices is challenging. Theory and research-based models can help. This article outlined how the Diffusion of Innovations Theory (Rogers, 2003) and the accompanying Collaborative Research Utilization Model (Dufault, 1995; Dufault, 2004) provide a well-designed plan for successfully integrating relaxation therapy into patient care.

Acknowledgments

The authors thank their colleague Christopher Wade, Ph.D., M.P.H., from the University of Washington Bothell School of Nursing and Health Studies, who provided the idea for this paper by asking the question: How would you use the Diffusion of Innovations Theory to integrate a complementary pain management approach into practice?

References

- American Cancer Society. (2018). Non-medical treatments for pain. Retrieved from <https://www.cancer.org/treatment/treatmentsand-side-effects/physical-side-effects/pain/non-medicaltreatments-for-cancer-pain.html>. (Accessed 15 August 2018).
- Anderson, K. O., Cohen, M. Z., Mendoza, T. R., Guo, H., Harle, M. T., & Cleeland, C. S. (2006). Brief cognitive behavioral audiotape interventions for cancer-related pain. *Cancer, 107*(1), 207–214.
- Avis, N. E., Levine, B., Marshall, S. A., & Ip, E. H. (2017). Longitudinal examination of symptom profiles among breast cancer survivors. *Journal of Pain and Symptom Management, 53*(4), 703–710.

- Balas, E. A., & Boren, S. A. (2000). Managing clinical knowledge for health care improvement. In J. Bemmel, & A. T. McCray (Eds.), *Yearbook of medical informatics 2000: Patient centered systems*. Stuttgart, Germany: Schattauer Verlagsgesellschaft.
- Ballantyne, J. C. (2017). Opioids for the treatment of chronic pain: Mistakes made, lessons learned, and future directions. *Anesthesia & Analgesia*, 125(5), 1769–1778.
- Bardia, A., Barton, D. L., Prokop, L. J., Bauer, B. A., & Moynihan, T. J. (2006). Efficacy of complementary and alternative medicine therapies in relieving cancer pain: A systematic review. *Journal of Clinical Oncology*, 24(34), 5457–5464.
- Brigham Young University. (2018). Counseling and psychological services. Retrieved from <https://caps.byu.edu/relaxationrecordings>. (Accessed 15 August 2018).
- Chinn, P. L., & Kramer, M. K. (2008). *Integrated theory and knowledge development in nursing* (7th ed.). St. Louis, MO: Mosby.
- Dartmouth University. (2018). Student Wellness Center. Retrieved from <http://www.dartmouth.edu/~healthed/relax/downloads.html>. (Accessed 15 August 2018).
- Dearing, J. W., & Cox, J. G. (2018). Diffusion of Innovations theory, principles, and practice. *Health Affairs*, 37(2), 183–190.
- Duensing, L. (2016). Integrative pain management. In R. A. Bonakdar, & A. W. Sukiennik (Eds.), *Integrative pain management: Transforming the paradigm of care* (pp. 23–26). New York: Oxford University Press.
- Dufault, M. (2004). Testing a collaborative research utilization model to translate best practices in pain management. *Worldviews on Evidence-Based Nursing*, 3(1), S26–S32.
- Dufault, M. A. (2001). A program of research evaluating the effects of a collaborative research utilization model. *Worldviews on Evidence Based Nursing*, 8(1), 37–43.
- Dufault, M. (1995). A collaborative model for research development and utilization: Process, structure, and outcomes. *Journal of Nursing Staff Development*, 11(3), 139–144.
- Dufault, M., & Sullivan, M. (1999). The effectiveness of using research-based pain management standards on patient outcomes. *Journal of Nursing Scholarship*, 31(9), 23.
- Dufault, M. A., & Willey-Lessne, C. (1999). Using a collaborative research utilization model to develop and test the effects of clinical pathways for pain management. *Journal of Nursing Care Quality*, 13(4), 19–33.
- Eaton, L. H., Meins, A. R., Mitchell, P. H., Voss, J., & Doorenbos, A. Z. (2015). Evidence-based practice beliefs and behaviors of nurses providing cancer pain management: A mixed methods approach. *Oncology Nursing Forum*, 42(2), 165–173.
- Elkins, G., Fisher, W., & Johnson, A. (2010). Mind–body therapies in integrative oncology. *Current Treatment Options in Oncology*, 11(3–4), 128–140.
- Fawcett, J. (2005). *Contemporary nursing knowledge: Analysis and evaluation of nursing models and theories* (2nd ed.). Philadelphia: F.A. Davis.
- Fernandez-Lao, C., Cantarero-Villanueva, I., Fernandez-de-las Penas, C., del Moral-Avila, R., Castro-Sanchez, A. M., & Arroyo-Morales, M. (2012). Effectiveness of a multidimensional physical therapy program on pain, pressure hypersensitivity, and trigger points in breast cancer survivors: A randomized controlled clinical trial. *The Clinical Journal of Pain*, 28(2), 113–121.
- Fouladbaksh, J. M., & Stommel, M. (2010). Gender, symptom experience, and use of complementary and alternative medicine practices among cancer survivors in the US cancer population. *Oncology Nursing Forum*, 37(1), E7–E15.
- Giannitrapani, K. F., Ahluwalia, S. C., McCaa, M., Pisciotto, M., Dobscha, S., & Lorenz, K. A. (2017). Barriers to using nonpharmacologic approaches and reducing opioid use in primary care. *Pain Medicine*, 19(7), 1357–1364.
- Glare, P. A., Davies, P. S., Finlay, E., Gulati, A., Lemanne, D., Moryl, N., Oeffinger, K. C., Paice, J. A., Stubblefield, M. D., & Syrjala, K. L. (2014). Pain in cancer survivors. *Journal of Clinical Oncology*, 32(16), 1739.
- Greece, J. A., & LaMorte, W. W. (2018). Diffusion of Innovations Theory. Retrieved from <http://sphweb.bumc.bu.edu/otlt/MPHModules/SB/BehavioralChangeTheories/BehavioralChangeTheories4.html>. (Accessed 15 August 2018).
- Green, C. R., Hart-Johnson, T., & Loeffler, D. R. (2011). Cancer related chronic pain. *Cancer*, 117, 1994–2003.
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly*, 82(4), 581–629.
- Greenlee, H., Balneaves, L. G., Carlson, L. E., Cohen, M., Deng, G., Hershman, D., Mumber, M., Perlmutter, J., Seely, D., Sen, A., Zick, S. M., & Tripathy, D. (2014). Clinical practice guidelines on the use of integrative therapies as supportive care in patients treated for breast cancer. *JNCI Monographs*, 50, 346–358.
- Greilich, P. E., Phelps, M. E., & Daniel, W. (2018). Diffusing innovation and best practice in health care. *Anesthesiology Clinics*, 36(1), 127–141.
- Hernandez-Reif, M., Field, T., Ironson, G., Beutler, J., Vera, Y., Hurley, J., Fletcher, M. A., Schanberg, S., Kuhn, C., & Fraser, M. (2005). Natural killer cells and lymphocytes increase in women with breast cancer following massage therapy. *International Journal of Neuroscience*, 115(4), 495–510.
- Horneber, M., Bueschel, G., Dennert, G., Less, D., Ritter, E., & Zwahlen, M. (2012). How many cancer patients use complementary and alternative medicine: A systematic review and metaanalysis. *Integrative Cancer Therapies*, 11(3), 187203.
- Inner Health Studios. (2015). Coping skills and relaxation resources. Retrieved from <http://www.innerhealthstudio.com/relaxation-mp3.html>. (Accessed 15 August 2018).
- Johannsen, M., Farver, I., Beck, N., & Zachariae, R. (2013). The efficacy of psychosocial intervention for pain in breast cancer patients and survivors: a systematic review and metaanalysis. *Breast Cancer Research and Treatment*, 138(3), 675–690.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt College Publishers.
- Kwekkeboom, K. L., Cherwin, C. H., Lee, J. W., & Wanta, B. (2010). Mind-body treatments for the pain-fatigue-sleep disturbance symptom cluster in persons with cancer. *Journal of Pain and Symptom Management*, 39(1), 126–138.
- Kwekkeboom, K. L., Wanta, B., & Bumpus, M. (2008). Individual difference variables and the effects of progressive muscle relaxation and analgesic imagery interventions on cancer pain. *Journal of Pain and Symptom Management*, 36(6), 604–615.
- Levy, M. H., Chwistek, M., & Mehta, R. S. (2008). Management of chronic pain in cancer survivors. *The Cancer Journal*, 14(6), 401–409.
- Li, X. M., Yan, H., Zhou, K. N., Dang, S. N., Wang, D. L., & Zhang, Y. P. (2011). Effects of music therapy on pain among female breast cancer patients after radical mastectomy: Results from a randomized controlled trial. *Breast Cancer Research and Treatment*, 128(2), 411–419.
- Meleis, A. I. (2007). *Theoretical nursing development and progress* (4th ed.). Philadelphia: Lippincott, Williams & Wilkins.
- Miller, K. D., Siegel, R. L., Lin, C. C., Mariotto, A. B., Kramer, J. L., Rowland, J. H., Stein, K. D., Alteri, R., & Jemal, A. (2016). Cancer treatment and survivorship statistics, 2016. *CA: A Cancer Journal for Clinicians*, 66, 271–289.
- Montgomery, G. H., Bovbjerg, D. H., Schnur, J. B., David, D., Goldfarb, A., Wetz, C. R., Schechter, C., Graff-Zivin, J., Tatrow, K., Price, D. D., & Silverstein, J. H. (2007). A randomized clinical trial of a brief hypnosis intervention to control side effects in breast surgery patients. *Journal of the National Cancer Institute*, 99(17), 1304–1312.
- Moryl, N., Coyle, N., Essandoh, S., & Glare, P. (2010). Chronic pain management in cancer survivors. *Journal of the National Comprehensive Cancer Network*, 8(9), 1104–1110.
- Nafziger, A. N., & Barkin, R. L. (2018). Opioid therapy in acute and chronic pain. *The Journal of Clinical Pharmacology*, 58(9), 1111–1122.
- National Center for Complementary and Integrative Health (NCCIH). (2018a). Mind-body practices. Retrieved from <https://nccih.nih.gov/health/mindbody>. (Accessed 15 August 2018).
- National Center for Complementary and Integrative Health (NCCIH). (2018b). Pain: Considering complementary approaches. Retrieved from <https://nccih.nih.gov/health/pain/ebook>. (Accessed 15 August 2018).
- National Center for Complementary and Integrative Health (NCCIH). (2018c). Relaxation techniques for health. Retrieved from <https://nccih.nih.gov/health/stress/relaxation.htm>. (Accessed 15 August 2018).
- Paice, J. A., Portenoy, R., Lachetti, C., Campbell, T., Chevillat, A., Citron, M., Constine, L. S., Cooper, A., Glare, P., Keefe, F., Koyyalagunta, L., Levy, M., Miaszkowski, C., Otis-Green, S., Sloan, P., & Bruera, E. (2016). Management of chronic pain in survivors of adult cancers: American Society of Clinical Oncology Clinical Practice Guideline. *Journal of Clinical Oncology*, 34(27), 3325–3345.
- Parse, R. R. (1987). *Nursing science: Major paradigms, theories, and critiques*. Philadelphia: Lippincott.
- Peterson, S. J., & Bredow, T. S. (2009). *Middle range theories: Application to nursing research* (2nd ed.). Philadelphia: Lippincott, Williams & Wilkins.
- Richmond, R. L. (2017). A guide to psychology and its practice: Progressive muscle relaxation. Retrieved from <http://www.guidetopsychology.com/pmr.htm>. (Accessed 15 August 2018).
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Rogers, E. M. (1962). *Diffusion of innovations*. New York: Free Press.
- Sheinfeld Gorin, S., Krebs, P., Badr, H., Janke, E. A., Jim, H. S., Spring, B., & Jacobsen, P. B. (2012). Meta-analysis of psychosocial interventions to reduce pain in patients with cancer. *Journal of Clinical Oncology*, 30(5), 539–547.
- Syrjala, K. L., Jensen, M. P., Mendoza, M. E., Yi, J. C., Fisher, H. M., & Keefe, F. J. (2014). Psychological and behavioral approaches to cancer pain management. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 32, 1703–1711.
- Tracy, S., Dufault, M., Kogut, S., Martin, V., Rossi, S., & Willey-Temkin, C. (2006). Translating best practices in nondrug postoperative pain management. *Nursing Research*, 55(2), S57–S67.
- Tracy, S. M. (2010). Piloting tailored teaching on nonpharmacologic enhancements for postoperative pain management in older adults. *Pain Management Nursing*, 11(3), 148–158.
- U.S. Preventive Services Task Force. (2018). Grade definitions. Retrieved from <https://www.uspreventiveservicestaskforce.org/Page/Name/grade-definitions>. (Accessed 15 August 2018).
- van den Beuken-van Everdingen, M. (2012). Chronic pain in cancer survivors: A growing issue. *Journal Pain Palliative Care Pharmacotherapy*, 26, 385–387.
- van den Beuken-van Everdingen, M. H., Hochstenbach, L. M., Joosten, E. A., Tjan-Heijnen, V. C., & Janssen, D. J. (2016). Update on prevalence of pain in patients with cancer: Systematic review and meta-analysis. *Journal of Pain and Symptom Management*, 51, 1070–1090.
- Walker, J. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing* (5th ed.). Upper Saddle River, NJ: Pearson Education.
- West, E., Barron, D. N., Dowsett, J., & Newton, J. N. (1999). Hierarchies and cliques in the social networks of healthcare professionals: Implications for the design of dissemination strategies. *Social Science & Medicine*, 48(5), 633–646.