An Integrative Review of Nursing Research on Active Surveillance in an Older Adult Prostate Cancer Population

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Prostate cancer is a common diagnosis in the older adult male population. In the United States, 1 in 6 men are at risk for a prostate cancer diagnosis during their lifetime, with an estimated 241,740 new cases diagnosed in 2012 (Siegel, Naishadham, & Jemal, 2012). The detection of prostate cancer has evolved from being clinically detected at a stage of advanced disease, where cure was unlikely, to the evolution of the prostate-specific antigen (PSA) blood test beginning in the late 1980s that increased screening and detection of early, low-grade disease. The use of the PSA blood test identifies men who are at risk and who, subsequently, undergo prostate biopsy. Currently, a large percentage of prostate cancers are detected as indolent cancers that may never manifest as clinically significant (Thompson & Klotz, 2010).

The detection of disease classified as an insignificant or indolent cancer creates a dilemma for healthcare providers and patients. Current statistics reflect that even when Gleason score and volume of cancer are classified as both low risk and low volume and, therefore, unlikely to impact mortality, 90% of patients will still go on to receive a definitive treatment in the form of either radiation-based treatment or surgery (Thompson & Klotz, 2010). The impact on quality of life on those treated patients also is significant; common side effects include erectile dysfunction and incontinence for those who have surgery, and persistent irritative bowel and bladder symptoms for those who have radiation therapy (Hayes et al., 2010).

A treatment option under increasing consideration as an alternative to surgery or radiation for the patient with low-risk, low-volume disease is active surveillance. Active surveillance is a treatment strategy of cooperative, intentional, and prescribed monitoring of prostate cancer, with a clearly defined strategy for intervention management reserved for patients who exhibit signs of disease progression by either a rapid sequential PSA increase or an increase in Gleason score or volume

Problem Identification: To summarize the current state of nursing knowledge regarding the management of older adult men with prostate cancer with active surveillance as the treatment strategy.

Literature Search: Publications of nursing research from January 2003 to March 2012 addressing patients with prostate cancer undergoing an active surveillance treatment management strategy.

Data Evaluation and Analysis: A paradigm shift in the recommendation to consider active surveillance is apparent in the literature. Since 2003, active surveillance has become a more frequent recommendation as the management approach for low-risk, small-volume prostate cancers. Current nursing literature provides data on decision making and the uncertainty associated with active surveillance; however, minimal information is available that specifically addresses the needs of the aging adult population with prostate cancer. In addition, the trajectory of adaptation has only been preliminarily identified within the body of nursing knowledge; the actions that promote or obstruct successful adaptation to active surveillance as a treatment approach require in-depth study.

Presentation of Findings: Active surveillance has relevance for the aging population while providing a potential means to judiciously allocate medical resources and expenses within the healthcare delivery system. The nurse researcher, in partnership with the advanced practice nurse, should proactively address the multifaceted needs of this patient population.

Implications for Nursing Practice: Active surveillance, as a program of cooperative, intentional, and prescribed monitoring of prostate cancer with a clearly defined strategy for management, is ideally suited for nursing research into the adaptation, educational needs, and management of chronic disease processes of older adult men while advancing the educator and provider roles of the advanced practice nurse.

Knowledge Translation: Active surveillance is an appropriate treatment option in older men with low-risk, low-volume prostate cancer. However, this treatment also is a source of uncertainty. Targeted, ongoing nursing education about active surveillance as treatment must address this uncertainty in this patient population so patients are comfortable with planned monitoring.

of disease after systematic routine biopsy (Madsen & Symes, 2012). Although criteria for active surveillance continue to evolve, current data suggest that the risk of death related to prostate cancer at 10 years within this treatment category is 3% (Albertsen, 2011; Klotz et al., 2010; Thompson & Klotz, 2010).

The recommendation to consider active surveillance in low-risk, low-volume disease is even more compelling within the population of men aged 75 years and older (Konety, 2009). These older adults frequently present with competing comorbidities that increase the risk of death from alternate causes (Roberts et al., 2011). In addition, maintenance of quality of life also remains a priority (Hayes et al., 2010; Stangelberger, Waldert, & Djavan, 2008). The economics of overtreatment in the low-risk population in the current climate of healthcare reform also must be a consideration (Cooperberg, Carroll, & Klotz, 2011; Corcoran, Peele, & Benoit, 2010). Therefore the topic for this review is an exploration of the current state of nursing knowledge about older adult men, defined as those aged 75 years or older, who are diagnosed with prostate cancer and managed with active surveillance as the treatment strategy.

Literature Review

A comprehensive literature search was conducted using the search term combinations of *active surveillance, prostate cancer, nursing,* and *elderly* or *aged* to identify articles with the terms in the title, as key words, or within the abstract. The databases accessed were MEDLINE®, Cumulative Index to Nursing, CINAHL®, and SCOPUS®. The time limitation imposed ranged from January 2003 to March 2012; literature preceding 2003 solely addressed watchful waiting, a variation of a nonintervention strategy defined more as an observation approach of disease progression with limited intervention, which conceptually differs from active surveillance as an approach to disease management. Both qualitative and quantitative research, in addition to reviews that referenced a population of men aged 75 years and older, were the focus of this literature search. The results obtained with this age limitation were restrictive; only two publications dealt solely with patients aged 75 years and older. When nursing articles that contained older (but not the sole age demographic) adult populations undergoing active surveillance were included, 10 additional articles and an abstract were eligible for review. Secondary sources of information from the identified articles also were reviewed for possible inclusion. One article from 2003 and one from 2004 were included because, although the treatment strategy was called watchful waiting, the defined monitoring approach clearly met the definition for active surveillance.

Thirteen nursing studies, one review, and one abstract with a primary focus on active surveillance in the prostate cancer population, published from January 2003 to March 2012, are summarized in Table 1. The greatest increase in active surveillance as a nursing research topic was in recent years, as only two nursing articles were published in 2003, two in 2004, and one in 2007, but 10 total articles were published from 2009–2011. Studies included in this review were a mixture of qualitative studies and randomized trials that characterized and addressed the current needs of patients with prostate cancer currently engaged in an active surveillance treatment strategy.

Data Synthesis

Hegarty and Bailey (2011) provided a review of the evolution of active surveillance as an optional treatment for prostate cancer. They noted the incidence of overdiagnosing prostate cancer to currently range from 30%–50% of screen-detected cancers. This statistic emphasizes a common observation in the literature; the overdiagnosis of prostate cancer translates to overtreatment and, subsequently, treatment-related side effects. Overdiagnosis and overtreatment result in an effort to control cancers that are statistically predicted to remain indolent without intervention (Abrahamsson, 2009; Klotz, 2010; Lawrentschuk & Klotz, 2011; Thompson & Klotz, 2010). Coupling those observations with the reported rate of 19% of men experiencing decisional regret (Birnie & Robinson, 2010) among patients who proceeded with a surgery or radiation supports the rationale for exploring treatment options and educating patients on the likelihood of side effects and disease progression in their lifetime. An interpretive, descriptive study by Davison, Oliffe, Pickles, and Mroz (2009) identified factors that enhanced decision making for the patient when offered active surveillance as a treatment option. This group concluded that the recommendation to consider active surveillance, coupled with the education associated with both the disease state and the active surveillance monitoring plan, were the most influential factors in decision making for the patient and family. Davison and Goldenberg (2011) re-examined the decision-making process in men currently on active surveillance and found that although participation in active surveillance was strongly influenced by the treating physician's recommendation, information and psychological support resources also were beneficial in maintaining comfort and satisfaction with the decision. A survey, developed as follow-up to a qualitative study conducted by Ollife, Davison, Pickles, and Mroz (2009), evaluated 73 men in a descriptive cross-sectional survey study to ascertain key elements of the patient decision process. The survey results revealed that

Table 1. Nursing Research on Active Surveillance in an Older Adult Prostate Cancer Population

Study	Design	Sample	Intervention	Conclusions	Limitations and Comments
Bailey et al., 2004	Randomized, descriptive, quantitative intervention study	A convenience sample of 39 men with a mean age 75.4 years from a urology practice	The intervention group (n = 19) received five weekly calls and the control group (n = 19) received standard care follow-up. GTUS, POMS-SF, and Cantril's Ladder Quality-of-Life Measurements were conducted at enrollment and at 10 weeks.	Quality-of-life ratings and the new view-of-life subscale of GTUS were significantly better in the intervention group. POMS-SF differed on the confusion subscale, with the intervention group significantly improved (p = 0.04).	Small study sample with an average enrollement in active surveillance program for 51 months at the time of study The study design should evaluate nursing intervention at the time of initial active surveillance enrollment for a multitude of reasons.
Bailey et al., 2007	Qualitative, descriptive study	A purposeful sample of 10 men ranging in age from 64–88 years and all within 12 months of a prostate cancer diagnosis from a urology practice	Used detailed, single interviews to explore concerns of older adult men undergoing a surveillance program	Additional evidence support that a program of active surveillance contributes to patient uncertainty about disease state. Study findings provide means to expand Mishel's UIT and devise nursing interventions to address uncertainty in this population.	Small sample size; significant age range might influence findings A follow-up interview 6–12 months later would provide additional information or support for findings.
Bailey et al., 2009	Descriptive, repeated measure, survey study	A convenience sample of eight men with a mean age of 75.4 years from one tertiary medical center urology practice	A repeated measures survey study was used to assess psychosocial trajectory in men undergoing active surveillance using telephone interviews and POMS, MUIS-C, and Cantril's Ladder Quality-of-Life Measurements.	Data were preliminary but provided indications for appropriate timing to initiate and expound on nursing education and intervention regarding psychosocial adjustment of men participating in active surveillance.	Small group with preliminary data only No follow-up data were located in search by author or topic.
Bailey et al., 2011	Secondary data analysis	Four convenience samples of men (N = 42) with a mean age of 76.6 years and who had low-risk cancer and were undergoing active surveillance: sample 1, n = 10; sample 2, n = 19; sample 3, n = 5; sample 4, n = 8	A secondary analysis was used to test and evaluate the reliability of MUIS-C for use in an active surveillance cohort of men with prostate cancer.	Confirmed (Cronbach alpha = 0.908) that full MUIS-C was a valid and reliable instrument for measuring uncertainty in men undergoing active surveillance for treatment management of low-risk prostate cancer	Small, with varied populations pooled for a secondary analysis MUIS-C and Mishel's UIT framework provide a foundation for future exploratory studies.
Davison et al., 2009	Interpretive, descriptive, qualitative design	25 patients with a mean age of 66 years who were on active surveillance with low-risk disease	Identified and described decision-making factors for men considering active surveillance for low-risk prostate cancer management	The most influential factors on agreement for active surveillance as treatment management were the medical team's presentation of both the disease state and the rationale for active surveillance treatment.	The study had a small sample size and was located in an urban setting. Extensive experience in active surveillance was identified as a management strategy. Nurses must be familiar with appropriate treatment options for low-risk prostate cancer and be able to educate and support patients in decision making and long-term follow-up.

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FACT-G—Functional Assessment of Cancer Therapy–General; GTUS—Growth Through Uncertainty Scale; MUIS-C—Mishel's Uncertainty in Illness Scale–community form; POMS-SF—Profile of Mood States–Short Form; UIT—Uncertainty in Illness Theory

Table 1. Nursing Research on Active Surveillance in an Older Adult Prostate Cancer Population *(Continued)*

Study	Design	Sample	Intervention	Conclusions	Limitations and Comments
Davison & Goldenberg, 2011	Cross-sectional descriptive study	Survey of 73 men with a mean age of 64.5 years who had elected to participate in active surveillance in the past 10 years, and who had confirmed low-risk disease	A cross-sectional descriptive study (average age was 64.5 years at time of diagnosis) that examined the process of decision making in patients currently under treatment for low-risk prostate cancer with active surveillance and identified patient resource needs	A physician's recommendation was the most important influencing factor regarding decision making. Eighty-two percent were comfortable with decision, 90% were satisfied with decision to be on active surveillance, and 55% reported not being anxious about cancer progression during active surveillance monitoring. Information on future treatment options, diet, and nontraditional treatment options were considered important resources by patients.	Limited by unvalidated survey questionnaire and pool of patients from one clinic. The extended range of treatment length also should be a consideration. Intriguing findings based on current literature. Clinic process should be evaluated for data regarding how patients are educated and supported throughout follow-up to see if results can be duplicated.
Ervik et al., 2010	Qualitative, exploratory study	A mixed population of 10 participants, with three on active surveillance and seven on androgen ablation	The study described patients' cancer perceptions and experiences when a curative treatment intervention is not recommended.	The patients felt that they had inadequate information about disease process. Limited time with the healthcare provider added to the sense of uncertainty. Spouses were the primary means of emotional support.	Limited by a small sample size and a mixed population. Patients on active surveillance potentially have differing concerns than patients on androgen ablation. Confirmed existing data that patients require more education and support of the disease process.
Hedestig et al., 2003	Qualitative, phenomenologic-hermeneutic approach	Seven patients ranging in age from 62–69 years from a Swedish database	In-depth interviews were conducted to explore the meaning of being a man living with untreated prostate cancer	Patients felt isolated and uncertain related to prognosis. "Living with a constant threat," although known to have localized disease, was instrumental in choice for active surveillance. Concerns existed regarding sexual problems, interpreted by patients as both a burden and a consequence of prostate cancer.	The small study group results were not generalizable but provide data for a follow-up nursing intervention. Intriguing that patients were knowledgeable about extent of disease but still interpreted it as a constant threat. Additional evidence is needed to support the uncertainty intervention.
Hegarty & Bailey, 2011	Review article	Literature review (2001–2011) of the evolution of active surveillance as a treatment option	Reviewed the current science of active surveillance as a treatment option in prostate cancer	Nurses play important roles by supporting men who are on active surveillance journeys.	No limitations noted Nurses need to participate in this care strategy for optimal patient management.
Kazer et al., 2010	Proposal for expansion of a theory-based intervention	Patients with a low-risk prostate cancer diagnosis participated in active surveillance.	The proposal was to expand Mishel's Intervention to Self-Manage Uncertainty associated with prostate cancer to the population of patients on active surveillance.	Not yet implemented; presented as a proposal with scientific rationale and theoretic framework	None noted Contained sound rationale for proposed testing.

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Table 1. Nursing Research on Active Surveillance in an Older Adult Prostate Cancer Population *(Continued)*

Study	Design	Sample	Intervention	Conclusions	Limitations and Comments
Kazer, Bailey, Colberg, et al., 2011	Qualitative, exploratory, focus group study	Seven participants on active surveillance who were aged 65 years and older with a mean age of 70 years	Examined the psychosocial and educational needs of patients participating in an active surveillance program	Participants had insufficient education about their disease and the Internet was the primary source of information. Men did not use traditional means of support, such as groups, spouses, or family.	The small sample size limited generalizability.
Kazer, Bailey, Sanda, et al., 2011	Pilot study with a single-subject design	Nine patients with a mean age of 72 years who were on active surveillance	This study assessed the feasibility of an Internet-based intervention to assist men and their management issues related to active surveillance participation and to improve their perceived quality of life.	Intervention feasibility was confirmed and showed a positive trend in regard to intervention impact. An overall good acceptability was noted by the patient population.	The small sample size limited generalizability. Well-designed pilot study to test feasibility of intended Internet intervention
Oliffe et al., 2009	Descriptive, qualitative study	A convenience sample of 25 men with a mean age of 68 years who had a low-risk prostate cancer diagnosis and were participating in active surveillance	The qualitative, descriptive study explored uncertainty and self-management strategies in men who were on an active surveillance treatment approach for low-risk prostate cancer	Participants self-managed uncertainty by either compartmentalizing the disease by solitary stoicism, or committing to proactively addressing disease uncertainty with complementary interventions such as diet modifications.	The self-selected convenience sample population could bias findings. Confirmed existing data that patients require more education and support of the disease process.
Wallace, 2003	Descriptive, quantitative survey	19 men with a mean age of 76 years who were on an active surveillance treatment approach to prostate cancer.	The quantitative survey explored uncertainty, anxiety, and quality-of-life impact of an active surveillance treatment approach for prostate cancer	Statistically significant relationships were noted among uncertainty, anxiety, and the perception of danger, which translated to decreased quality of life.	Contained a small sample size with persistent difficulty in recruitment to survey participation Supports Mishel's UIT for patient populations on active surveillance
Walsh Scura et al., 2004	Prospective, randomized, pilot study with supplemental qualitative information gathering	17 men with a mean age of 66 years who were newly diagnosed with clinically localized prostate cancer	Participants received telephone support in addition to mailed educational materials for 12 months (experimental) versus mailed educational materials (treatment). The impact of the telephone support on physiologic, emotional, functional, and social adaptation to diagnosis and treatment was assessed with FACT-G, Symptom Experience Scale–prostate, and the Relationship Change scale, in addition to qualitative interviews.	No statistical significance was noted between experimental and treatment groups, although qualitative interviews supported the use of a telephone intervention in assisting men to adapt during the 12 months after treatment.	A pilot study (small group) in combination with mixed methods (qualitative and quantitative) may impact statistical results. Appropriate selection of Roy's Adaptation Model as a theoretical framework for pilot study

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the urologist's recommendation, the risk to urinary function with interventional treatment, and the age at diagnosis were key factors that influenced the decision to participate in an active surveillance program. Of particular interest was the finding that 82% of the participants in the survey reported being comfortable, and 90% reported decision satisfaction with an active surveillance approach, with the majority (55%) not reporting anxiety about cancer progression while on observation (Davison & Goldenberg, 2011).

Nursing Research Intervention

Kazer, Bailey, Colberg, Kelly, and Carroll (2011); Kazer, Bailey, Sanda, Colberg, and Kelly (2011); Kazer, Bailey, and Whittemore (2010); and Wallace (2003) conducted several research studies of the active surveillance patient population throughout the period covered in this review. An initial exploration by Wallace in 2003 was a descriptive survey study that examined the variables of uncertainty and quality of life in 19 men with prostate cancer undergoing an active surveillance treatment strategy. Increasing uncertainty accompanied by the perception of danger or risk was a primary finding, and it was suggested that nurses should target the development of patient education materials and interventions designed to address the risk of increasing uncertainty and anxiety associated with monitored but untreated cancer. Although Wallace (2003) had a small study population, the findings suggest that uncertainty results in a perception of danger that then impacts quality of life. Research has subsequently been built on these findings and extended the focus to uncertainty and the management of that experience within the theoretical framework of Mishel's Uncertainty in Illness Theory (UIT), a middle-range nursing model originally proposed in 1988 and revised in 1990 (Mishel, 1990). The UIT is an established framework for study of active surveillance as treatment for prostate cancer because of the documented persistent uncertainty associated with monitoring known disease (Bailey, Wallace, & Mishel, 2007; Wallace, 2003). An abstract from Bailey et al. (2009) evaluated the psychosocial trajectory of eight men during a 24-month period of active surveillance monitoring. Although final results were not available for review, the abstract identified time intervals for implementation of nursing interventions directed at decreasing patient uncertainty. A focus-group study conducted by Kazer, Bailey, Colberg, et al. (2011) identified the psychosocial and educational needs of men undergoing active surveillance as treatment for prostate cancer. The findings support the consistent observation in the literature that men may not have adequate information and access to appropriate educational resources on active surveillance as a treatment. Of note, the Internet was their primary source of information. Kazer, Bailey, Sanda, et al. (2011) also found that men did not use traditional support structures or family as a means to verbalize uncertainty, anxiety, or concern. The findings by Ervik, Nordoy, and Asplund (2010) echoed patients' perceived lack of support structures. Although the study also included men receiving endocrine therapy, patients on active surveillance expressed a need for concrete information regarding their expected disease trajectory. Of note, patients routinely remarked that short meeting times with healthcare providers added to their sense that additional support and education about disease was not provided in the time increments necessary to decrease personal anxiety and uncertainty related to their disease (Ervik et al., 2010). Uncertainty was examined by Oliffe et al. (2009) in a qualitative study assessing self-management strategies in men participating in active surveillance. The study revealed that, in the absence of a formal or structured program to address the uncertainty that men experience with an active surveillance disease management approach, participants self-manage uncertainty by either compartmentalizing the disease using solitary stoicism or commit to proactively addressing disease uncertainty with complementary interventions such as diet modifications (Oliffe et al., 2009).

Bailey et al. (2011) reported on a secondary analysis conducted to test reliability of Mishel's Uncertainty in Illness Scale–Community Form in four cohorts of men undergoing active surveillance for prostate cancer. The intent of this secondary analysis was the validation of a survey tool used to measure uncertainty within the active surveillance population. The validation of the tool lays the preliminary foundation needed to develop future uncertainty management interventions. Kazer et al. (2010) continued the exploration of management of uncertainty within the active surveillance treatment population with a proposed expansion of Mishel's Uncertainty Management Intervention (UMI), an intervention developed for patients with breast and prostate cancer (Mishel et al., 2002). The stated intention for Kazer et al. (2010) was to test the intervention tool in the active surveillance population as a means to assist this cohort of men. The intended outcome of the proposed intervention would be to provide a better understanding of the expected trajectory of disease by reframing it as a chronic condition rather than an impending threat while also providing tools directed at self-support. A follow-up to the proposed UMI intervention was reported as a pilot study by Kazer, Bailey, Sanda, et al. (2011) to provide preliminary data and confirm feasibility of an Internet-based intervention designed to assist older adult men to self-manage disease-related concerns and, subsequently, improve quality-of-life perceptions. The results demonstrated both feasibility and positive impact trends.

Educational Needs

The necessity to accurately educate patients and offer supportive care to patients is not trivial. The demonstrated outcome of unaddressed uncertainty often translates to a sense of urgency to intervene (Albertsen, 2011; Hegarty & Bailey, 2011; Roberts et al., 2011; Thompson & Klotz, 2010; Wallace, 2003). This feeling is particularly valid in those with anxious or neurotic personality traits, as reported by Van den Bergh et al. (2009), and predicts for risk of an inclination to treat indolent prostate cancer. The exploration of individual treatment priorities allows for the possibility to frame treatment decision making within the context of a well-educated patient who understands outcome statistics and self-identified quality-of-life priorities.

To address the needs of both education and support, Walsh Scura, Budin, and Garfing (2004) conducted a pilot study to evaluate the effectiveness of telephone support intended to enhance adaptation to a prostate cancer diagnosis. A comprehensive battery of symptom experience survey instruments were used to assess functional, social, physical, and emotional well-being during the four time points of assessment throughout the 12-month study. The study evaluated telephone support plus mailed standard educational materials versus mailed standard educational materials only. Although findings did not reach statistical significance, a trend existed toward positive adaptation in the group that participated in the telephone support arm of the study.

Bailey, Mishel, Belyea, Stewart, and Mohler (2004) also conducted a telephone intervention intended to evaluate the effectiveness of a program directed at assisting men to cognitively reframe perception of their disease state and manage uncertainty. A watchful waiting intervention was tested in a convenience sample of 39 men who completed the study. The experimental group (n = 19) received five weekly calls, lasting an average of 13 minutes, while the control group (n = 19) received standard care that was not described in detail. The Growth Through Uncertainty Scale (GTUS), Profiles of Mood States–Short Form (POMS-SF), and Cantril's Ladder Quality-of-Life Measurements were completed at enrollment and 10 weeks after enrollment in both groups (Kilpatrick & Cantril, 1960; Mishel, 1997; Schacham, 1983). Quality-of-life ratings and the new view-of-life subscale of GTUS were significantly better in the intervention group than in the control arm. The POMS-SF differed on the confusion subscale, with the intervention group showing significant improvement ($p = 0.04$) (Bailey, Mishel, Belyea, Stewart, & Mohler, 2004).

Existing Models of Care for Nursing Practice

Nursing interventions have been explored as a means to avert or decrease the uncertainty of living with known disease. Oliffe et al. (2009), Davison et al. (2009), and Davison and Goldenberg (2011) explored patient decision making and self-management regarding uncertainty during active surveillance. Using the Roy Adaptation Model as the theoretic framework, Walsh Scura et al. (2004) suggested nursing interventions that facilitate adaptation to a prostate cancer diagnosis with emphasis on the multidisciplinary assessment of the patient and the surrounding environment from a nursing perspective. By focusing on the human potential for conscious awareness and choice—two factors directly related to the concept of active surveillance—the applicability of the Roy Adaptation Model in this population as a theoretic framework also is apparent (Roy, 2009).

Gaps in Nursing Research

Active surveillance as a treatment option continues to evolve and now is recognized as an underused treatment option for low-risk, low-volume disease in patients of all ages. Prior nursing research on watchful waiting as a treatment option does exist, but nursing research of active surveillance as it currently is described is limited. As the criteria for active surveillance of prostate cancer evolve, the impetus for increased nursing research is likely to grow as well. The National Institutes of Health ([NIH], 2011) state of the science conference report is a call for nursing action; the stated need for patient characteristics to be measured with standardized instruments and incorporated into the decision making of patients under consideration for active surveillance should alone compel greater nursing engagement. The apparent need to characterize patient baseline anxiety, in addition to the patient's associated quality of life, must be evaluated to not only assist with the physician's selection of appropriate candidates for active surveillance as a treatment approach but also to tailor patient education and patients' long-term expectations regarding disease management. A general consensus on the most appropriate time gaps and monitoring strategies for this cohort of patients also is needed (NIH, 2011). Collaboration with physician colleagues, with a goal of the establishment of a monitoring algorithm, could provide a foundation for research and eventual establishment of evidence-based practice. In addition, the literature consistently reports that the recommendation to consider active surveillance is inconsistent and dependent on the practitioner making the original diagnosis (Davison et al., 2009; Gorin, Soloway, Eldefraway, & Soloway, 2011; NIH, 2011). Therefore, given the opportunity to advance the education of patients who are recommended to pursue active surveillance treatment in combination with long-term care management of these patients, similar to care

management in the survivorship arena, research in this area should become a nursing priority.

Implications for Future Nursing Research

The paradigm shift toward active surveillance as a treatment strategy, in combination with the well-documented lack of detailed education and assurance by nursing science as the primary cause of patient uncertainty and anxiety (Bailey et al., 2011; Ervik et al., 2010; Kazer, Bailey, Colberg, et al., 2011, Kazer, Bailey, Sanda, et al. 2011; Kazer et al., 2010; Oliffe et al., 2009; Van den Bergh et al., 2009; Wallace, 2003), creates opportunity for evaluating the way care is provided to this population. Addressing the economics of their care also should be a consideration based on Cooperberg et al.'s (2011) observation that active surveillance is labor intensive and reimbursed relatively poorly. The economics, in combination with a perceived risk of an undetected, clinically significant disease, often influences both the physician provider and the patient to pursue more aggressive treatment than may frequently be warranted (Cooperberg et al., 2011). Alternate ways to provide active surveillance as a cost-effective method of prostate cancer treatment, such as monitoring by advanced practice nurses (APNs), could be a consideration.

APNs may be in an ideal position to monitor this patient cohort, following an established algorithm, while providing the time-intensive educational support required to assist the patient in their management of a disease. Providing patient education through the APN presents patient value at two levels. First, it provides the opportunity to assess and address quality of life as patients live with disease; secondly, it offers an educational opportunity to teach patients about coping skills and interventions to manage stress, uncertainty, and fear. The challenge for nurses is how best to assist patients diagnosed with prostate cancer who pursue active surveillance rather than an interventional treatment so that they can comfortably continue without the definitive treatment. An additional area of nursing research is needed to identify the trajectory of adaptation—what actions promote and what actions obstruct successful adaptation.

Conclusion

Multiple and varied nursing research opportunities exist within this population of prostate cancer survivors who are monitored using active surveillance. Current research reflects the need to develop and implement patient and family education programs that address anxiety and associated uncertainty of the disease state. Qualitative and quantitative studies to assess the short- and long-term adaptation to active surveillance also are areas of opportunity for nursing research, particularly of the role of APNs regarding patients with prostate cancer. Active surveillance, as a method of cooperative, intentional, and prescribed monitoring of the disease with a clearly defined strategy for management, is ideally suited for nursing research into adaptation, education, and management of chronic disease processes while advancing the role of the APN.

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