

**An Exploration of Social Support of Patients with Prostate Cancer Accessing
Hospital Services**

by

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ABSTRACT

AN EXPLORATION OF SOCIAL SUPPORT OF PATIENTS WITH PROSTATE CANCER ACCESSING HOSPITAL SERVICES

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Prostate cancer can be defined as the development of a mass of cells forming a cancerous tumor in the prostate. Prostate cancer is one of the most common forms of cancer and one of the top types of cancer-causing death among men in North America. The psychosocial impact on men living with prostate cancer is a major issue for their health. Research suggests that men who had the highest stress levels were those that perceived to have few people to share their emotional problems with (Jan et al., 2016). In this current study, participants were invited from a regional hospital in Kitchener, Ontario to complete a survey that contained demographic questions and the Berlin Social Support Scales. Results suggest that there were no statistically significant differences between men who reported their masculinity impacted or not and their social support scores. There were also no statistically significant associations between income and need for support and support seeking, as well as patients' relationship status and whether they reported their masculinity impacted or not. Moreover, suggestions are given for moving forward with research surrounding patients with prostate cancer and their social support needs.

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Introduction

Background

Prostate cancer is defined as the development of a mass of cells forming a cancerous tumor in the prostate (National Cancer Institute, 2017). The prostate is a walnut-sized gland in the male reproductive system and is located just beneath the bladder around the urethra and is responsible for the secretion of seminal fluid (National Cancer Institute, 2017). There are many risk factors associated with the development of prostate cancer. As men age, their risk of developing prostate cancer increases. Approximately 85% of prostate cancer patients are diagnosed after the age of 65 (Patel & Klein, 2009). Another risk factor is ethnic origin. African-American men had the highest rates (Campbell, Keefe, McKee, Waters & Moul, 2012; Gronberg, 2003; Quinn & Babb, 2002) and American/Alaskan Natives had the lowest rates of prostate cancer in Canada (Fradet, Klotz, Trachtenberg & Zlotta, 2009). Obesity is another risk factor for the development of prostate cancer. Increased intake of fats increases the risk of developing prostate cancer (Bostwick et al., 2004). Another established risk factor for prostate cancer is a family history of the disease (Attard et al., 2016). Elevated Prostate Specific Antigen (PSA) levels are measured by a blood test, and an additional risk factor, but do not always result in prostate cancer (Attard et al., 2016). High PSA levels may be due to an enlarged prostate (benign hyperplasia), inflamed or infected prostate (prostatitis), a urinary tract infection (UTI), bike riding, and warmer climates (Canadian Cancer Society, 2017). As well, a high PSA level may be due to high false positive rates (Harvey, Basuita, Endersby, Curtis, Iacovidou & Walker, 2009). In most prostate cancer diagnoses, active surveillance is used. As cancer progresses, many treatment modalities may cause psychological distress (Canadian Cancer Society, 2017). For example, prostatectomy may produce distressing treatment outcomes such as impotence or

incontinence (Canadian Cancer Society, 2017). Prostate cancer treatment can cause psychological distress as the patients' view of masculinity can be disturbed in patients who experience impotence and/or incontinence (Janoff-Bulman, 1992). Additionally, the inability to predict future outcomes may be distressing for patients. Fortunately, research has demonstrated associations between higher levels of social support and a decrease in psychosocial distress (Eisenberg, Kurita, Taylor-Ford, Agus, Gross & Meyerowitz, 2015; Preyde, Chevalier, Hatton-Bauer & Barksey, 2010). For this current study, I explored social support as well as masculinity in patients who are receiving prostate cancer treatment at a regional cancer center.

Literature Review

Prevalence

Prostate cancer is one of the most common forms of cancer in men worldwide (Sadeghi-Gandomani et al., 2017). In 2012, the highest rates of prostate cancer are in Australia/New Zealand, North America and Western and Northern Europe, while the lowest rates are in Asian populations (Sadeghi-Gandomani et al., 2017). Prostate cancer represents the third leading cause of cancer-related death in men living in Canada and prostate cancer accounts for approximately one-fifth of all cancer cases in men (Canadian Cancer Society, 2017). Currently, 1 in 7 men will be diagnosed with prostate cancer in their lifetime, and 1 in 27 men will die from prostate cancer (Fradet et al., 2009). In Canada, the incidence rate is 99 per 100,000 people, while in the United States the incidence rate is 138 per 100,000 and in the United Kingdom, the incidence rate is 111.1 per 100,000 people (Banerjee & Kaviani, 2016; Ferlay et al., 2015). Out of these countries, Canada has the lowest incidence rate while the United States has the highest incidence rate. As suggested by Ferlay et al (2015) the precise reason as to why some countries have higher incidence rates than others is not scientifically proven yet, but may be due to an interaction of genes, diet, lifestyle and so on. Due to improvements in diagnostic technology worldwide,

prostate prevalence and rates of survival are increasing while incidence rates are decreasing (Canadian Cancer Society, 2017; Dickinson, Shane, Tonelli, Gorber, Joffres, Singh & Bell, 2016). Researchers Quon, Loblaw, and Nam (2011) conducted a study to estimate the magnitude of new prostate cancer patients in the year 2021 and found that by the year 2021, new cases for prostate cancer may triple to 76,379 in Canada. The increase in the prevalence rates for men with prostate cancer may be due to an increase in early detection screening tools (Fradet et al., 2009), earlier age of diagnosis (Statistics Canada, 2016), more advanced and sensitive imaging/detection technology and increase in aging population (Weiner, Matulewicz, Eggener & Schaeffer, 2016). Other social and biological factors that may affect the increase in prevalence rates is unknown (Weiner et al., 2016).

Symptoms and Progression

Physical symptoms, such as pain, can be an early sign of issues regarding one's health. The first sign of pain may lead patients to seek medical attention. In the United States, 70% of men living with prostate cancer have admitted to ignoring symptoms such as generalized pain (Shore, 2015). Almost one third (30%) of men with prostate cancer-related bone metastases, experienced pain for seven months or more before receiving an official diagnosis (Shore, 2015). In some cases, men who have prostate cancer in the early stages do not experience any symptoms (Shore, 2015). Other men may experience early symptoms such as burning or pain during urination, difficulty urinating, frequent urges to urinate at night, loss of bladder control, decreased flow or velocity of the urine stream, and blood in the urine (Cancer Centre, 2017). Most symptoms are experienced as cancer progresses and treatment is needed (Shore, 2015).

Treatment Options

There are many treatment modalities such as External Beam Radiation Therapy, Brachytherapy, Hormonal Therapy, Chemotherapy, Radical Prostatectomy and Active Surveillance (Prostate Cancer Canada, 2017). In most cases, men do not need treatment immediately after diagnosis, and thus men with prostate cancer go through Active Surveillance (Canadian Cancer Society, 2017). During this period, the patient's healthcare team closely monitors the patient to detect any prostate cancer progression (Canadian Cancer Society, 2017). A PSA blood test and digital rectal exam are administered once or twice a year and a biopsy of the prostate every 1 to 3 years (Prostate Cancer Foundation, 2018). If cancer progresses, treatment may be warranted. Active Surveillance also helps to avoid side effects that are most often related to other treatment options (Canadian Cancer Society, 2017). External Beam Radiation Therapy delivers beams of radiation to a specific area in the prostate (Lukkahatai, Patel, Gucek, Hsiao & Saligan, 2013; Prostate Cancer Canada, 2017). Brachytherapy is also known as internal radiation therapy, where either radioactive seeds or radioactive needles are inserted into the prostate gland (Prostate Cancer Canada, 2017). Side effects of External Beam Radiation Therapy and Brachytherapy are similar. The side effects of these treatments may consist of: fatigue, bowel problems (i.e., bleeding, diarrhea, and pain), bladder problems (frequency, burning and incontinence), sexual problems such as erectile dysfunction, pain and swelling between the scrotum and rectum and blood in the urine (Canadian Cancer Society, 2017). Hormonal therapies are used to reduce testosterone levels in the prostate to eliminate its effect on the cancerous cells (Hammerer & Madersbacher, 2012; Prostate Cancer Canada, 2017). Side effects for hormonal therapy consist of the following: sexual problems (low sex drive, erectile dysfunction and penile shrinkage), hot flashes and mood swings, breast tenderness and

growth of breast tissue, weight gain, loss of muscle, bone thinning and bone fractures, fatigue, diarrhea, depression, concentration problems and heart problems (Canadian Cancer Society, 2017). Chemotherapy is used for men with prostate cancer when radiation therapy has ceased to slow the growth of cancer (Prostate Cancer Canada, 2017). The side effects of chemotherapy consist of nausea and vomiting, diarrhea, low blood cell counts, fatigue, hair loss, sore mouth and throat and loss of appetite (Canadian Cancer Society, 2017). Radical Prostatectomy is used for the complete removal of the prostate gland (Prostate Cancer Canada, 2017; Terret & Droz, 2011). Side effects of the complete removal of the prostate are bleeding and infection, erectile dysfunction and changes in orgasms, loss of bladder control, the buildup of lymph fluid, swelling in the genital area, and anal leakage (Canadian Cancer Society, 2017). Most treatment options may have severe side effects. With some physiotherapy, men may be able to regain their potency and reduce rates of incontinence (Eton, Lepore & Helgeson, 2001). Medication is also used to control for the pain associated with treatment side effects. Moreover, there are various treatment options which can cause confusion and distress in patients who are trying to choose the most successful treatment option, while also minimizing the risk of impotence and incontinence. Treatment modality was not analyzed in the current study. Most patients in the current study were seeking radiation treatment.

Psychosocial Impact

Anxiety and depression may be triggered when a patient is diagnosed with cancer and when treatment begins (Swartzman, Booth, Munro & Sani, 2017). According to Swartzman et al. (2017), reactions to a diagnosis of cancer mimic the criteria for Posttraumatic Stress Disorder (PTSD), as outlined in the Diagnostic Statistical Manual-5 (DSM-V). Under the DSM-V criteria, cancer is classified as a traumatic event (American Psychological Association, 2013). It can be

life-threatening and can trigger intense fear, horror, and helplessness (American Psychological Association, 2013). Furthermore, Rustad, David, and Currier (2012) indicated that an additional concern was that the psychosocial impact of a cancer diagnosis might cause generalized distress. Generalized distress may be viewed as a form of sadness, anger, and worry (Rustad et al., 2012). These forms of generalized distress are also integrated with PTSD (Rustad et al., 2012). Derogatis and Melisaratos (1983) found patients and their partners reported heightened levels of depression and anxiety during the cancer treatment period.

Cognitive complaints, intolerance of uncertainty, fear of recurrence, cancer-related physical symptoms and cancer-related distress are a few of the many psychosocial issues that are experienced throughout the prostate cancer progression (Eisenberg et al., 2015). Eisenberg et al. (2015) suggested that increased cognitive complaints (problem-solving, memory, concentration, confusion, etc.), and higher intolerance of uncertainty, are related to increased distress. The findings also suggest that the more intolerance of ambiguity they reported, the more patients avoided reminders of their cancer; resulting in higher cancer-related distress (Eisenberg et al., 2015). Eisenberg et al. (2015) also reported that some survivors experienced cancer-related distress three to five years after cancer treatment.

Preyde et al. (2010) explored the psychosocial needs and the psychosocial oncology needs of patients with cancer. Preyde et al. (2010) identified psychosocial challenges such as difficulty coping and feelings of distress, problems interacting with family members or significant others, somatic complaints, and instrumental needs. Preyde et al. (2010) identified multiple stressors associated with feelings of distress. Thoughts of uncertainty surrounding treatment and symptoms, difficulty concentrating, and altered self-perceptions were among the stressors related to feelings of distress. Moreover, these investigators identified that even when

informational needs were met, some distress may still be experienced due to not knowing their treatment outcomes. Subsequently, Preyde, Hatton-Bauer, Cunningham, and Panjwani (2012) conducted a survey of men with prostate cancer about their emotional experience and quality of life. The participants were given an informational pamphlet on distress and later reassessed their quality of life. The results indicated that while the patients thought the informational support was helpful, they still reported moderately high scores for emotional problems. Participants rated “worry” as most problematic, followed by anxiety, loss of interest and nervousness. Concerns remained for patients reporting high levels of distress and patients reporting difficulty in accessing counseling support (Preyde et al., 2012). If people in the patient's social support network do not understand the patient's frustrations and concerns, it may be hard for them to provide helpful support. Further research to explore how patients with prostate cancer perceive the helpfulness of their social support may inform practice.

Social Support

Relationship Status and Social Support. In a meta-analysis of family caregivers of cancer patients, Northouse, Katapodi, Song, Zhang, and Mood (2010) suggested that 84% of caregivers are spouses. Bonn et al. (2015) explored the roles of social support and stress, primarily examining the role of spouses and marital satisfaction during cancer diagnosis and treatment. These researchers found that men who had the highest stress levels were those who perceived that they had few people with whom to share their emotional problems. Elevated stress levels can lead to an increased rate of mortality, sleep loss and higher rates of grief (Bonn et al., 2015). Baskin, Kwan, Zavala, and Chamie (2016) studied the impact of partnership status and social support on health-related quality of life in men with prostate cancer. The researchers

concluded that if the patients had some social support, they were more likely to experience positive outcomes in their overall health-related quality of life (Baskin et al., 2016).

Income and Social Support. Fagundas et al. (2012) suggest that socioeconomic status and supportive personal relationships relate to health benefits. Results from Fagundas and colleagues' (2012) study indicated that individuals who have social support, but lower socioeconomic status may not have the same health benefits as individuals with social support and higher socioeconomic status. Mitschke and Kang (2012) found that men who had lower socioeconomic status were more likely to ask for social support from friends and family than men who had higher socioeconomic status. Mitschke and Kang (2012) suggested that those who had lower economic status may have little access to resources. Access to resources may include counselling, transportation and travel costs, childcare accommodations if necessary, and so on (Nelson, 2010).

Masculinity Norms

According to Ronald Levant (2011) masculinity is defined as a universal expression of biological maleness and is viewed as a social role shaped by stereotypes and norms. Ronald suggested some traditional norms of masculinity such as dominance, aggression, extreme self-reliance and restrictive emotionality. In addition, Hoyt (2009) suggested that masculinity was composed of toughness, restrictive emotionality, and restriction of feminine behaviour. Socialization is a large contributing factor to perceived gender differences and it may be impossible to control for environmental influences on gender differences. Pleck and colleagues (1994) suggested that from a constructionist's perspective, the concepts of masculinity and femininity have been adopted by an individual's culture. These gender stereotypes and meanings (masculinity and femininity) are socially constructed based on characteristics and behaviours

widely believed to be typical of men and woman (Golombok & Fivush, 1994; Street, Kimmel & Kromrey, 1995; Williams & Best, 1990). Individuals are then encouraged to conform to these accepted social norms of gender (masculinity and femininity) (Eagly, 1983). Thus, when individuals conform to these social expectations, it creates a self-fulfilling prophecy of behaviour that is reinforced by social experiences throughout their life (Geis, 1993; Crawford, 1995; Kimmel, 1995). As men age and their bodies begin to decline in functionality, their masculine identity may suffer (van den Hoonaard, 2009). Thus, men who are middle aged may turn to non-bodily ways of demonstrating their masculinity to emphasize their sexual prowess and superiority (van den Hoonaard, 2009).

Janoff-Bulman (1992) indicated that prostate cancer could be interpreted as a victimization experience that may threaten the view of one's self, in this case, the masculine self. Burns and Mahalik (2008) suggest that masculinity is complex and connected to men's responses to prostate cancer through their psychosocial and psychosexual distress that accompanies their illness and treatment. Becoming ill and becoming impotent are threats to their perception of traditional masculine roles. Treatment side-effects such as erectile dysfunction can impact men's quality of life and psychosocial adjustment (Chambers, Chung, Wittert & Hyde, 2017).

Depression and anxiety are two critical associations with loss of masculinity (Sharpley, Birsika & Denahm, 2014). Illness can imply weakness and sexual functioning is one way to validate masculinity (Janoff-Bulman, 1992). As men manage their prostate cancer, they may undergo treatments to help reduce the growth of prostate cancer, such as Prostatectomy, hormonal therapy, and radiation therapies that may have physical consequences such as impotence and incontinence by damaging the muscles surrounding the prostate (Michaelson, Cotter, Gargollo, Zietman, Dahl & Smith, 2008). For example, the removal of the prostate may affect the muscles

needed to sustain erections and bladder control. These symptoms may produce psychosocial distress regarding physical inadequacies (Michaelson et al., 2008). These physical inadequacies may compete with a man's view of traditional masculine roles (Couper, Bloch, Love & Duchesne, 2006). Men were distressed about the potential of permanent sexual dysfunction and a loss of sexual desire (Rivers et al., 2011). Previous research suggested that men who hold more traditional views of masculinity report increased emotional distress, depression, and anxiety (Good, et al., 1995). The patients in the study believed that side effects such as loss of sexual desire and sexual dysfunction, reduced their sense of masculinity, resulting in decreases in their self-confidence and self-esteem (Rivers et al., 2011). Interestingly, female spouses perceived the survival of their spouse to be more critical than their spouses sexual functioning and sex drive (Rivers et al., 2011). Thus, the distress of a perceived disturbance in traditionally masculine roles experienced by patients with prostate cancer may impede patients' adjustment to the illness as various treatment methods may affect their sexual functioning and control over bodily functions (Helgeson & Lepore, 1997). Loss of libido was consistently found to have a threatening impact on men's sense of masculinity (Chambers et al., 2017). Thus, men's masculine identity may be linked to prostate cancer and erectile dysfunction (Chambers et al., 2017).

Burns and Mahalik (2006) concluded that men with prostate cancer perceived that it would be best to keep their emotions hidden, especially from their loved ones. The themes of "being a young man" were characterized by having a problem-focused mindset, sexuality, competitive, and physical strength. These themes were shown to be consistent with prior research describing how masculinity is connected to prostate cancer (Burns & Mahalik, 2007). They also demonstrated a gap in research in which little is known about factors that promote or impede men's adjustment following prostate cancer treatment (Burns & Mahalik, 2006).

Mehnert, Lehmann, Huland, and Koch (2010) identified that the men wanted to avoid any communication regarding their cancer and their cancer treatment in hopes of returning to their normal life. Campbell and Fiske (1969) also suggest that men with diminished masculinity may avoid asking for help and want to be left alone to cope with life demands. Some men viewed seeking help for their problems as not “macho” and seeking professional help was perceived as “fussing” (Hale, Grogan & Willott, 2007). Gray, Fitch, Phillips, Labrecque & Fergus (2000) suggested that even when men sought help, they perceived their problems as trivial to maintain their perceptions of strength, independence, and control (Hale et al., 2007). As well, Gottlieb, Maitland, and Brown (2013) reported that wives rated their husbands coping method as avoidant. Gottlieb et al. (2013) concluded that wives who sufficiently provided social support to their more avoidant husbands had better adjustment than husbands who were less avoidant.

To conclude, prostate cancer and its treatment can provoke significant distress for individuals which can affect their perceptions of self, including masculinity. Researchers should explore the extent of distress surrounding masculinity that prostate cancer and treatment can elicit. As well, patients tend to avoid discussing topics surrounding their cancer with family and friends. Some patients believe that men should not share their feelings. This avoidance can create even more anxiety, depression, and negative symptoms throughout their cancer journey. Therefore, it is essential to explore these possible barriers to seeking social support, to provide patients with prostate cancer the best possible resources to have the most successful treatment outcomes.

Theoretical Framework

Social Support theory was used to guide the study and to contextualize results. Social support is a multidimensional concept and refers to the structural components (social integration

in networks) and functional components (actual report received, and perceived support received) (House, 1981; Reblin & Uchino, 2008; Seeman, 2008). Perceived social support and actually received social support are considered different constructs. Perceived social support refers to the cognitive conceptualization of social support regardless of the accuracy of the perception. Actually received support refers to the specific interactions and actions of individuals in the supportive environment (Dolbier & Steinhardt, 2000). Cassel (1974) suggested that when an individual does not feel safe or valued, one can experience a state of continuous arousal and may require support transactions to return the individual to a state of feeling safe and valued. Researcher Krista Trobst (2000) suggested that from an interpersonal perspective, material resources may provide a medium for the discussion of interpersonal messages about love and status. Providing material resources may have different interpersonal meanings depending on the attributions of the recipient, the motives of the provider, and the manner it is presented (Trobst, 2000). Trobst (2000) further explained that regardless of the resource provided, transactions between the recipient and provider that result in the recipient feeling worthy and loved are most often regarded as supportive. Researchers Carmicheal, Reis and Duberstein (2015) suggested that as one ages, the importance of the quantity and quality of our relationships change. This study suggests that younger individuals prioritize quantity of relationships over quality, whereas older individuals prioritize quality of relationships over quantity (Carmicheal, Reis & Duberstein, 2015). Social support can be further separated into emotional, instrumental, and informational support (Wills, 1991). Emotional support refers to the things that people do to make one feel cared for and loved, and that can bolster one's feeling of self-worth (non-tangible types of assistance) (Seeman, 2008). Informational support refers to the help that others may offer through the provision of information (Seeman, 2008). Finally, instrumental support applies

to the various types of tangible actions provided by others (e.g., housework, transportation, money) (Seeman, 2008). Social support theory is focused on human relations, including how social support can assist individuals in meeting expressive and instrumental needs (Colvin, Cullen & Vander Ven, 2002). Individuals develop a sense of social support by reflecting on how approachable and forthcoming people are in their social environment (Pierce, Sarason & Sarason, 1991). The accumulation of supportive experiences influences the interpretations of social interactions and expectations of the self and others (Sarason, Pierce, Shearin, Sarason & Waltz, 1991).

Emotional support is vital for many cancer patients during their cancer journey (Slevin et al., 1996). Cancer patients can abruptly transition from a state of good health to many adverse health transitions (Wortman & Dunkel-Schetter, 1979). Patients need to understand what the future entails and need to feel supported and reassured by their support network (Wortman & Conway, 1985). Dunkel-Schetter (1984) reported that patients who receive reliable and consistent emotional support adjust more successfully over time than patients who receive weak and inconsistent emotional support.

Instrumental support includes the delivery of material goods such as money, transportation, and help with household activities (Wortman & Dunkel-Schetter, 1987). Wortman and Dunkel-Schetter (1987) suggested that this type of support may counterbalance the loss of control patients may experience during their cancer treatment. Patients can then exert more control over their cancer treatment and can increase their feelings of dependence (Wortman & Dunkel-Schetter, 1987). Results from Helgeson and Cohen's (1996) study indicated that patients desire instrumental support from family more than friends and healthcare professionals.

Informational support has been identified as improving informed decision making, self-care skills, and adherence to treatment recommendations. Informational support is also linked to reducing fear, anxiety, and mortality and increasing empowerment and hope (Broeders et al., 2002; Gornick, Eggers & Riley, 2004; Lambert & Loiselle, 2007). Informational support has also been suggested to prompt individuals to use cancer screening services and guide the development of innovative informational interventions (Finney Rutten, Arora, Bakos, Aziz & Rowland, 2005; Michielutte et al., 2005; Taylor et al., 2001).

Research has demonstrated direct associations between social support and health (Benedict et al., 2015; Bonn et al., 2015; Mitschke & Kang, 2012). One hypothesis used to explain this association is the direct effects hypothesis where it is thought that people with high social support are healthier than people with low social support, regardless of stress (Cohen & Wills, 1985; Zhou et al., 2010). Stressor factors can enhance disease susceptibility (Kaplan, Cassel & Gore, 1977); therefore, having a supportive network can cause biochemical changes which can influence an individuals' immune system resulting in better overall health. Additionally, having a support group to encourage patients to take their medication for treatment would result in better adherence to prescribed medication and result may result in better health outcomes.

Social support has also been found to buffer the adverse events and stressors in life (Cullen, Link, Wolfe, & Frank, 1985). Indirectly, social support has been found to be beneficial during stressful times (Taylor, 2011). Thus, having supportive individuals to discuss problems and feelings of anxiety and depression may help alleviate distress in patients (Kaplan, Cassel & Gore, 1977). Social support can help individuals by encouraging healthy choices and behaviours, help individuals cope better with stress, reduce state anxiety and depression and improve

motivation to achieve their goals (Cherry & Gans, 2017). In addition, social support can help to reduce feelings of isolation, provide validation for emotional experiences, provide understanding and to help normalize the situation (Preyde, Ardal, & Bracht, 2001). The protective factors associated with social support are a function of nature, strength, and availability of supports (Kaplan, Cassel & Gore, 1977). Thus, social support protects (or buffers) individuals from experiencing stressful events (Cohen & Wills, 1985). This indirect link has been associated with the alleviation of depression symptoms (Tulin & Yesim, 2004). Moreover, patients who experience low levels of social support may experience more anxiety and depressive symptoms that could affect their overall health while undergoing treatment than patients who experience higher levels of social support (Barrera, 1986). Lepore (2001) suggested that patients' social environment may have a strong influence on their ability to cognitively process their cancer. Also, those with high perceived social support report better mental health outcomes than those with low perceived social support (Lakey & Cronin, 2008). Benedict et al., (2015) proposed that mood, positive or negative, have varying effects on health. Positive mood such as happiness, joy, excitement, etc., has been shown to provide benefits to health by decreasing anxiety. Social support may be an essential factor to sustain positive mood in the presence of anxiety and distress. Benedict et al., (2015) stressed that more research should examine the extent to which social support impacts health-related quality of life by promoting positive mood. Studies have shown that individuals with higher levels of social support have an increased rate of survival (Holt-Lunstad, Smith & Layton, 2010). These patients reported that they also had less intrusive thoughts about their prostate cancer after treatment. Social support theory was used to explore the perceived social support of patients with prostate cancer who are currently receiving treatment.

Rationale

The overall purpose of the proposed cross-sectional survey research was to explore and identify the social supports that men with prostate cancer report. Since limited research has been focused on the support of men with prostate cancer, it is essential to explore how patients perceive the support if any, that is given to them and the support that they receive. Also, it is essential to investigate how the patient's perception of masculinity may be altered during the prostate cancer treatment period. Therefore, I examined the social support scores that men with prostate cancer reported and explored potential group differences between men who reported that cancer treatment impacted their masculinity or not impacted their masculinity. Social support has been shown to be an essential factor when dealing with psychosocial distress. Previous research has suggested that men with prostate cancer who hold traditional masculine norms may avoid communication about cancer and may avoid seeking help when dealing with psychosocial distress.

Previous research has suggested that men with lower socioeconomic status (SES) may be more likely to seek help from family and friends due to lack of access to resources than men with higher SES. Therefore, I will be exploring the relationship between income and need for support and support seeking while controlling for age and retirement status. Studying income has the potential to identify any economic differences to seeking support and the need for support among patients with prostate cancer. Patients who have lower income may report that they need more support than those who have higher income. For example, patients may not have the funds necessary to arrange for babysitters, or transportation to go to appointments. Additionally, patients with low income may report lower scores on support seeking because they cannot afford

professional counselling or afford to seek support in other ways. Level of income may impact one's ability to seeking support.

Exploring the social support of patients with prostate cancer could help identify areas of need and possibly enhance access to the care they need. Recognizing the support levels of patients reporting that their masculinity was affected could inform psychosocial oncology. Since this study involves exploratory research, the variables are somewhat arbitrary. Exploratory research is used to gather preliminary information and to help define problems and suggest hypotheses on problems that have not yet been clearly defined. The labels regarding “independent” and “dependent” variables are merely used to employ the MANOVA and regression to explore potential relationships. Therefore, for this current study the potential relationships will be explored which does not suggest causation or direction and which is consistent with cross-sectional exploratory research.

Research Questions

This study is part of a more extensive study on the psychosocial health needs of men with prostate cancer. Three research questions were explored for this thesis. First, what levels of social support do men with prostate cancer report. Secondly, were there statistically significant differences in social support scores (emotional, instrumental, need for support, support seeking, actually received support and protective buffering) between men who reported their masculinity was impacted by prostate cancer treatment and men who reported prostate cancer treatment did not affect their masculinity? If a statistically significant difference exists between these groups, it suggests that men who hold masculinity conformity norms may report lower levels of social support. Future research can then explore potential solutions to combat the impact of cancer treatment on masculinity and to help prostate cancer patients receive the social support they

need. Third, did socioeconomic status (SES) impact need for support and support seeking? If statistical significance exists, it may suggest that men who have lower SES may need more support. Investigating income may help caregivers and medical personnel understand that every patient has different needs; thus, they can be better prepared to deal with differing needs to help reduce distress in patients.

Methodology

The current study received ethical clearance from the Research Ethics Boards of a local K-W hospital and the University of Guelph (Appendix A). Patients who accessed oncology services at a regional hospital were asked to complete an anonymous survey beginning in August 2017. This survey is part of a more extensive needs assessment research project.

Participants

Patients with prostate cancer who visited a regional hospital for any treatments or for follow-up appointments were asked to complete an anonymous survey to identify their psychosocial and sexual health needs. During data collection, some participants may have received treatment on more than one occasion (sometimes daily) but were only asked to participate in the study once.

Recruitment Procedure

At the beginning of each day of data collection, the Oncology Clinic Nurses involved in the care of patients with prostate cancer informed the patients about the study and gave patients a consent form and a survey for their consideration to participate in the study (*Appendix C*). Patients were instructed to keep the consent information if they participated in the study. Patients had the option to complete the survey the same day it was given to them at the hospital and then

return the survey in a drop box at the reception desk. Patients could also take the survey home and return the survey at their next appointment at a local K-W hospital, or they were given an addressed, stamped envelope to return the survey by mail. Some of the patients may have received treatment on more than one occasion (sometimes daily), which allowed the patients to bring the surveys home and return them in the drop box at reception the next day.

Measures

The pencil and paper questionnaire was designed to explore the perceived social support of patients with prostate cancer. Social support was measured with the *Berlin Social Support Scales (BSSS)* (Schwarzer & Schulz, 2013). The BSSS was designed to measure cognitive and behavioural aspects of social support to assess quality, type, and function of social support. The BSSS is divided into four types of social support: perceived support (emotional and instrumental), actually received support, need for support, support seeking, and the protective buffering scale. Participants used a 4-point rating scale (1- strongly disagree, 2- somewhat disagree, 3- somewhat agree, 4- strongly agree) with a higher number reflecting greater support. To score the BSSS, the mean score for each subscale calculated. This scale was self-administered and took approximately 20 minutes to complete. Internal consistency values for subscales are: Perceived Social Support: Cronbach's alpha = .83; Received Social Support: Cronbach's alpha = .83; Need for Support: Cronbach's alpha = .63; Support Seeking: Cronbach's alpha = .81; Protective Buffering: Cronbach's alpha = .82 (Schulz & Schwarzer, 2013). The low Cronbach's alpha for Need for Support could be due to a low number of questions (4 questions). Convergent validity has been demonstrated in several studies (Schulz & Schwarzer, 2013). Convergent validity is the degree to which two measures (masculinity and social support) that should be related are related (Campbell & Fiske, 1959). DiMillio, Hall, Ezer, Schwarzer, and Korner

(2017) further validated the BSSS using exploratory factor analysis and found that the measure had strong internal consistency ($\alpha = .90$) as well as convergent and discriminant validity.

Discriminant validity is the degree to which two measures that should not be related are unrelated (Campbell & Fiske, 1959).

The perceived support subscale has 16 items (emotional, instrumental, need for support and support seeking). The first section is used to explore how much emotional support the patient perceives from an individual closest to them (e.g., There are some people who truly love me). The second sub-section (instrumental) explores whether the patient can rely on the one closest to them and whether they can offer support (e.g., I know some people whom I can always rely). The third sub-section (need for support) explores whether the patient needs support from one closest to them (i.e., When I am down, I need someone who boosts my spirits). The final sub-section (support seeking) explores whether the patient will ask for help if needed (i.e., I need help I ask for it).

The second section, actually received social support, consists of 14 items exploring emotional, instrumental and informational support (e.g., The person showed me that he/she loves and accepts me). For three negative items (e.g., The person criticized me) the scores were reversed. The final scale, protective buffering scale, consists of six items, exploring a range of actions a patient might exhibit to conceal negative news, avoid upsetting someone, pretending to be strong, etc.). This survey allowed the researchers to explore perceptions of social support men with prostate cancer perceived to have and whether participants' masculinity had been affected by their cancer (diagnosis, treatment, etc.). Additionally, one question was used in the larger survey in which patients were asked if their masculinity had been affected by their cancer (yes or no response).

At the beginning of the survey, demographic information was collected. Participants were asked to report their age, sex, ethnicity, income level (used to measure socioeconomic status), marital status, level of education, occupation, years of diagnosis, and distance to the hospital.

Data Analysis

Support levels were analyzed with descriptive statistics. A one-way Multivariate Analysis of Variances (MANOVA) was used to test the group differences between whether masculinity was affected during the prostate cancer treatment period or not on the six different types of social support (emotional, instrumental and informational, need for support, support seeking and protective buffering scale). A MANOVA was selected to analyze the relationship between masculinity and social support scores due to the tests ability to analyze more than one dependent variable. In this current study, the mean scores of each of the six scales were used as the dependent variables. To conduct a one-way MANOVA, a few assumptions must be met. Two or more continuous dependent variables should be correlated (six subscales of the BSSS and three overall scales). The independent variable should consist of two or more categorical variables (Men's masculinity impacted, and men's masculinity not impacted). There should be independence of observations (must have different participants in each group) and adequate sample size. There should also be no univariate or multivariate outliers. Outliers were tested by analyzing boxplots in SPSS. There should be multivariate normality, which was tested using the Shapiro-Wilk test of normality. There should be a linear relationship between the dependent variables for each independent variable. The linear relationship was examined by analyzing a scatterplot matrix in SPSS. There is homogeneity of variance-covariance matrices. This assumption was analyzed using Box's M test of equality of covariance. If the hypothesis fails this test, the Levene's test of homogeneity of variance will be used. Finally, multicollinearity

was tested by analyzing the correlations of the dependent variables to ensure moderate correlations (Laerd Statistics, 2013). To conduct this analysis, a sample size of at least 26 in each group (masculinity affected or not) was needed to observe a large effect with an alpha of 0.05 (Cohen, 1992).

Additionally, two Linear Regressions were used to explore associations between income and the need for support and support seeking while controlling for age and retirement status. Linear regression was chosen for its ability to test for one dependent variable, multiple independent variables and to control for variables. Age will be controlled for as it is one of the major risk factors for developing prostate cancer. Retirement status will be controlled for as retirement may impact patients' income. Need for support and support seeking were chosen for this analysis based on research by Mitschke and Kang (2012) who suggested that patients with lower SES may have little access to resources and are more likely to ask family and friends for help. Nelson (2010) also suggested ways patients' income may be impacted by cancer treatment (travel costs, childcare, etc.). Therefore, by selecting need for support and support seeking from the other social support subscales, these variables could explore the potential relationship between lower income and support seeking needs. In the first analysis, age was entered into the block (model) in the first stage as the independent variable and need for support was entered as the dependent variable. In the second stage, to control for retirement status, retirement was entered as the independent variable and need for support was entered as the dependent variable. In the third stage, income was entered as the independent variable and need for support was entered as the dependent variable. In the second analysis, the variables were entered the same as the first analysis, except support seeking was the dependent variable instead of need for support. The assumptions for a Linear Regression are as follows: the dependent (need for support and

support seeking scores) and the independent (income) variables are continuous. There should be a linear relationship between the dependent, and independent variables, independence of observations, no significant outliers, data demonstrates homoscedasticity, and the residuals should be approximately normally distributed (Laerd Statistics, 2018).

Since there were no statistically significant results as hypothesized, a chi-square test was subsequently conducted to explore associations between whether patients' masculinity was affected or not during treatment and their relationship status (single or in a relationship). This test was selected for the ability to test for associations using categorical variables. This test will explore whether men who have prostate cancer are more likely to hold masculine beliefs if they are single rather than in a relationship. Patients who are not in a relationship (i.e., inconsistent support) may be more likely to hold masculine beliefs (i.e., avoid discussing cancer, hiding emotions from others). The assumption for this test is whether there are no cells with an expected count of less than five (Laerd Statistics, 2018).

Missing Data

Missing data were computed using Expectation Maximum (EM) procedure in SPSS. EM is a method of Maximum Likelihood (ML) (Graham, 2009). EM is an iterative algorithm that calculates maximum likelihood estimates (Graham, 2009). The EM procedure is a common algorithm for computing ML estimates for missing data and has been used in multiple studies (Ibrahim, Zhu & Tang, 2008; Lipsitz & Ibrahim, 1996; Little & Rubin, 2002; Shakespeare-Finch & Obst, 2011). In this study, approximately 17% of the data were missing and were considered completely random, Little MCAR test, $\chi^2(859) = 904.94, p = .135$. Missing data between 15% and 20% are common in psychological research (Enders, 2003).

Results

Overall, 72 patients agreed to participate with an estimated response rate of 33% of those who were contacted. Participant characteristics appear in *Table 1*. Patients' ages ranged from 58-87 years, with a mean age of 73.61 years old. Of those who reported ethnicity, all but one identified as Caucasian or Canadian (53/54). Most participants were retired (80.88%), married (82.9%) and indicated high school or some high school as their highest level of education (46.15%). Patients reported a mean yearly household income of \$77,607.14. The most common reason for going to the hospital was for treatment or radiation with a doctor (30.43%). Most participants reported 0-5 years of time since diagnosis (67.16%) and an average distance traveled to the hospital of 26.53 km. Finally, most participants indicated that their masculinity (45/68) had not been affected by their prostate cancer treatment (See *Table 1*).

Overall, the results of the social support scores indicated that patients with prostate cancer reported having sufficient social support (perceived emotional, perceived instrumental, actually received support, need for support and support seeking). Results of the study also suggested that patients have individuals who can support them when needed whether their masculinity was affected or not (See *Table 2*). No statistically significant difference was found between social support scores and patients who reported their masculinity was affected by prostate cancer treatment, and those who did not.

Overall, patients reported scores closer to 4 for perceived instrumental support and scores closer to 1 for need for support. The determination that a score of 3.81 was considered a high score was based on the interpretation of results in the research conducted by Schulz and Schwarzer (2003) and DiMillo et al (2017). DiMillo et al (2017) suggested that a score of 3.47 was relatively high (See *Table 2*). Patients perceived to have emotional support in this study by

reporting that when they were feeling sad or not well, someone was there to cheer them up and comfort them. Patients also reported that they had perceived instrumental support by knowing individuals they could ask for help and whom they could rely on. Actually received support was determined by patients who reported that individuals made the patients feel valued, were concerned for their condition, and did not criticize them. In this study, patients reported that they somewhat agreed and somewhat disagreed with statements involving the need for support (means ranged from 3.06 to 2.80). Therefore, some patients reported that they needed someone to help boost their spirits, to listen to them and help make important decisions, whereas some participants reported that they did not necessarily need help in those areas. Results of the protective buffering scale suggested that patients somewhat disagreed with statements such as, I avoided criticism, I pretended to be strong, I kept all bad news from them and so on. These results suggest that in most situations, patients tended to discuss their treatment and did not try to be strong in front of their loved ones. These scores are comparable to the original German study investigating patients who have had surgery to remove cancerous tumors (Schulz & Schwarzer, 2003), another German study investigating social support on adjustment to laparoscopic radical prostatectomy (Scholz, Knoll, Roigas & Gralla, 2008) and a Canadian study exploring patients with melanoma (DiMillo, Hall, Ezer, Schwarzer & Korner, 2017). In the present study, the BSSS had moderate internal consistency reliability, and the scores on each subscale of the BSSS had moderate to high internal consistency reliability (See *Table 3*). The reliability results are comparable with Schulz and Schwarzer's original study (2003).

Assumptions of MANOVA

Most of the assumptions to conduct a MANOVA were met. The dependent variables were the items on the BSSS (6 subscales), and the independent variable was whether cancer

treatment affected masculinity, with two levels representing masculinity was affected, and masculinity was not affected. There was independence of observations. The assumption for sample size was met. The assumption regarding outliers in the data was violated. Eleven extreme outliers were three box lengths away: Mean Emotional Support $N = 2$, Mean Instrumental Support $N = 5$, and Mean Received Support $N = 2$. The outliers remained in the analysis because the results would not be materially affected by transforming the data or removing the participants (Laerd Statistics, 2018). Additionally, due to low sample size, I chose to retain the participants' data and not remove patients with extreme outliers. The Shapiro-Wilks test of normality was violated and indicated that only need for support and the protective buffering scale were normal. The violation of the assumption of normality may be due to the complexity of the data and the sample size; therefore, the analysis was conducted (Laerd Statistics, 2018). Visually analyzing the scatterplots indicated a linear relationship between the dependent and independent variables. The assumption regarding homogeneity of variance-covariance was met for the six BSSS scores (emotional, instrumental, actually received, need for support, support seeking, and protective buffering), $Box's M = 29.297$, $F(21, 7518.016) = 1.234$, $p = .210$. After analyzing the correlations of the dependent variables, there was no multicollinearity.

Social Support Scores

MANOVA. A one-way MANOVA was used to determine if there were any statistically significant differences in social support scores between patients who identified that their masculinity was affected and those who identified their masculinity was not affected by their prostate cancer treatment. There were no statistically significant differences between the two groups on the six BSSS scores (emotional, instrumental, actually received, need for support,

support seeking, and protective buffering), $F(6, 61) = .902$, $p = .500$, $\eta^2 = .081$ and observed power was .329.

Assumptions of Regression

Most of the assumptions were met when conducting two Linear Regressions to explore the relationship between income and the need for support and support seeking for patients with prostate cancer while controlling for age and retirement status. The continuous independent variable was income, and the continuous dependent variables were the need for support and support seeking. The assumption regarding whether a linear relationship exists between the variables was met, as indicated by a scatterplot. There was independence of observations for the relationship between income and need for support (Durbin Watson = 1.862) and support seeking (Durbin Watson = 1.888) due to the Durbin Watson values close to two. The assumption regarding outliers and homoscedasticity was met. The assumption regarding outliers was violated. In total, there were two outliers present on the scatterplot: Need for Support $N = 1$ and Support Seeking $N = 1$. The outliers remained in the analysis because the results would not be materially affected by transforming the data or removing the participants (Laerd Statistics, 2018). Additionally, due to low sample size, I chose to retain the participants' data and not remove patients with extreme outliers. The assumption regarding the normality of residuals was met, by visually analyzing the histogram and the normal p-p plot.

Social Support Impact on Income. Two Linear Regressions were used to determine whether income was associated with need for support and support seeking while controlling for age and retirement status. The results of the first analysis indicated that 1.9% of the variance was explained by age ($R^2 = .019$, $F(1, 55) = 1.015$, $p = .310$). With the addition of retirement status in the second model, retirement did not add to the variance of the model and the variance remained

1.9% ($R^2 = .019$, $F(2,55) = .516$, $p = .600$). In the third model, income was added and increased the variance by .06%, thus, 2.5% of the variance was explained ($R^2 = .025$, $F(3, 55) = .438$, $p = .727$). Moreover, the analysis revealed that age ($\beta = -.137$, $t(55) = -.842$, $p = .404$), retirement ($\beta = -.004$, $t(55) = -.026$, $p = .979$) and income ($\beta = -.075$, $t(55) = -.544$, $p = .589$) were not statistically associated with patients' need for support. See *Table 4 & 5* for the correlation matrices.

In the second analysis, results indicated that 1.4% of the variance was explained by age ($R^2 = .014$, $F(1, 55) = .782$, $p = .381$). With the addition of retirement status in the second model, retirement increased the variance by 1.5%, thus 2.9% of the variance was explained for by age and retirement ($R^2 = .025$, $F(2,55) = .797$, $p = .456$). In the third model, income was added and increased the variance by 3.9%, thus, 6.8% of the variance was explained ($R^2 = .068$, $F(3, 55) = 1.270$, $p = .294$). Moreover, the analysis revealed that age ($\beta = .040$, $t(55) = .252$, $p = .802$), retirement ($\beta = .145$, $t(55) = .914$, $p = .365$) and income ($\beta = -.198$, $t(55) = -1.477$, $p = .146$) were not statistically associated with patients' support seeking.

Relationship Status and Masculinity

Since there were no statistically significant results, associations between masculinity (affected and not affected by treatment) and relationship status (single and in a relationship) were explored using a Chi-Square test. A Chi-Square test was used based on previous research indicating that men who undergo prostate cancer treatment, who hold masculine beliefs, and are single, may experience feelings of “damaged goods” and feel different from others, experience worse sexual satisfaction and find disclosure to be more difficult than partnered patients (Carpentier, Fortenberry, Ott, Brames & Einhorn, 2011). The results of this test indicated that

there were no statistically significant associations between whether patients' masculinity was affected by their prostate cancer treatment and their relationship status, $\chi^2 (2) = 2.540$, $p = .281$.

Discussion

In this exploration of social support needs for patients with prostate cancer, men with prostate cancer reported that they had support, or knew of an individual with whom they could ask for help if they needed it. The social support scores were not statistically different between men who did and did not report that their masculinity was affected by their cancer treatment. Patients' level of income was not associated with their need for support or support seeking while controlling for age and retirement. Additionally, there was no relationship between patients' relationship status (single versus in a relationship) and their masculinity (affected, not affected). Since the analysis demonstrated no significant results, the hypotheses for this sample were not confirmed; however, these relationships/associations may exist in other samples of the population and are still important to explore in future prostate cancer studies. Based on the mean reported scores for each subscale on the BSSS, it was interpreted that patients reported that they agreed with the statements on the scale and thus had social support. The BSSS consisted of a four-point Likert scale where 1 indicated strongly disagree, and 4 indicated strongly agree. Therefore, when scores were summed, the results suggested that patients agreed with the statement, and thus had social support. Results should be interpreted with caution as scores were based on a four-point Likert scale and scores between 3 and 4 only differed by hundredths; therefore, the difference between the scores are small.

The non-significant results mean that there is no statistical evidence that differences between groups exist by chance. It is important to note that the labeling of "independent and dependent" variables were used to employ the MANOVA and Regression to explore associations

and without inference to causation. In this study, the independent variable does not precede the dependent variable and cannot be said that the independent variable predicts or causes a change in the dependent variable. The lack of direction and causation in the results is consistent with exploratory cross-sectional research (Singh, 2007).

Social Support

Types of Social Support. Most patients in the study were in a relationship and income did not impact their ability to seek social support or need for support. Approaches to measuring social support can be further divided into emotional, instrumental, and informational forms of support. Emotional support relates to making the patient feel loved and cared for during their cancer treatment, which can increase the patients' overall mood (Seeman, 2008). Patients in the study indicated that when they were sad, they had someone who could comfort them and cheer them up. Benedict et al., (2015) suggested that social support networks can provide joy, excitement, and could lift patients' mood. Having a supportive network can provide entertainment and laughter to distract patients from their cancer treatment; thus, increasing their overall mood. Additionally, Dunkell-Schetter (1984) suggested that patients who receive reliable and consistent support are more successful in their treatment over time. In this current study, patients reported having perceived and overall emotional support from caregivers. Thus, it is important for patients to remain connected to their support networks and focus on remaining positive through their cancer journey.

Instrumental support refers to tangible actions provided by others such as housework or financial support (Seeman, 2008). The patients in this study reported that they had individuals on whom they could rely for support. Additionally, they reported that they knew of an individual who did many things for them and tasks they could not manage on their own. Wortman and

Dunkell-Schetter (1987) indicated that supporters could counterbalance the loss of control that patients may experience. By taking care of tasks patients can no longer handle, the extra help allows them to focus more on their treatment and less on other tasks (i.e., cleaning) Wortman & Dunkell-Schetter, 1987). It is essential for patients to know who they can trust when they need help. In this study, patients reported that they had received instrumental support, and had individuals with whom they could trust to support them when they needed help. At times, patients may need additional assistance to talk to someone and when making decisions. Patients reported that they somewhat agreed with statements regarding seeking social support which suggests that in most situations, they tend to ask for help when they need it. It is essential for patients to have a variety of individuals to count on to support them so that caregivers do not experience burnout (Debska, Pasek & Wojtyna, 2017) from continuously completing multiple tasks for patients.

Informational support is provided by others offering help through knowledge and facts (Seeman, 2008). Healthcare professionals can provide informational support by providing resources and information pamphlets or other formats, regarding prostate cancer, treatments, and side effects. Providing such information may help to put the patient at ease by becoming knowledgeable on the topic and by knowing what to expect during treatment. The patients' family and friends can provide informational support by helping to make informed decisions about various treatments (Ganz et al., 2013) teach self-care skills and help patients adhere to treatment recommendations. These supporters can provide this information by reading educational pamphlets related to prostate cancer or finding information on trusted internet sites such as information provided by the hospital. Preyde et al. (2012) reported that the information patients received from the psychosocial workshops offered by the hospital were perceived as

helpful. The patients perceived the workshops to be helpful in the preparation, explanation, and expectations of their cancer treatment. Patients in the current study reported that individuals helped them find something positive about their situation and were able to suggest activities that may distract them. Eisenberg et al. (2015) and Preyde et al. (2010), stated that intolerance of uncertainty, cancer-related physical symptoms, and cancer-related distress are the top psychosocial issues associated with prostate cancer. By informing patients of what they can expect, patients may have less fear and anxiety about their treatment. Similarly, by providing information on physical symptoms of prostate cancer treatment, patients may be less anxious by knowing what they can expect from treatment (Dubois & Loiselle, 2009). It is essential to ensure a stress-free environment while patients undergo treatment to provide the best treatment results. Moreover, more information about prostate cancer, prognosis, and what they can expect from treatment, can prompt individuals to participate in screening services for prostate cancer (Michielutte et al., 2005; Taylor et al., 2001). When patients receive more information, they may feel more prepared for consultations and treatments (Dubois & Loiselle, 2009).

Impact of Social Support. Higher social support can be directly associated with patients who are healthier, regardless of any stress, they may be experiencing (Cohen & Wills, 1985; Zhou et al., 2010). Patients who receive more social support may experience better mental and physical well-being (Cohen & Wills, 1985; Zhou et al., 2010). Patients with prostate cancer may experience some psychosocial impacts such as fear, anxiety, and depression. These psychosocial impacts may hinder the mental well-being of patients (Swartzman, Booth, Munro & Sani, 2017). Patients may experience the indirect effects of social support such as buffering adverse events and stressors in their life (Taylor, 2011). Social support may alleviate depressive symptoms by reminding patients that they are not alone (Barrera, 1986; Lepore, 2001). When patients have a

supportive network, the social environment may strongly influence patients' ability to process their cancer diagnosis cognitively (Lepore, 2001). When a loving and supportive network surrounds the patient, it is easier to discuss stressful situations and create a plan of action to help cope with the difficult moments (Roberts, Lepore & Hegelson, 2006). Related to direct associations of social support, more consistent and positive social support may increase physical and mental functioning over time (Dunkell-Schetter, 1984). For example, patients with more social support tend to have less intrusive thoughts after treatment than patients who have less social support (Roberts et al., 2006). Ruminating about the negative experiences or thoughts associated with prostate cancer can lead to lower mental functioning (Cohen & Wills, 1985). Therefore, having a supportive network to distract patients from negative thoughts, and finding the positive moments during their treatment period may increase their rate of survival and lift patients' mood. Patients need to feel supported and in a good state of mind to heal successfully during cancer treatment (Cancer Treatment Centers of America, 2018; Chaoul, Milbury, Sood, Prinsloo & Cohen, 2014).

Relationship Status and Masculinity. Patients' relationship status did not affect their masculinity during prostate cancer treatment. This finding is consistent with some researchers who have found no significant differences in social, psychological, and total well-being in patients who were single or in a relationship (Adamczyk & Segrin, 2015; Jatoi et al., 2007). However, other research findings suggest that patients in a relationship reported lower psychological distress, better mental and perceived physical health than patients who are single (Kamen et al., 2016; Palner & Mittelmark, 2002). Researchers Tuinman and colleagues (2009) found that men in their study who were single were more likely to experience sexual problems and worse sexual functioning than men in a relationship. Chambers and colleagues (2017)

suggested that a loss of sexual functioning impacted patients' perceptions of their masculinity. Since this current study did not find a relationship between relationship status and masculinity, it does not mean that this relationship is less important. It is imperative for men who are single or in a relationship to have the support necessary to help them when they feel that their masculinity is impacted. Patients should be provided information and support on the complications of treatment and treatment side effects. When patients undergo treatment, it could impact their sexual functioning and thus lower their feelings of masculinity and impact their intimate and romantic relationships.

Income. Most patients also reported that their income did not appear to be associated with their need for support and support seeking. Participants may have had access to onsite psychosocial oncology when they took the survey, which may have affected their ratings of social support. Patients who were speaking with a psychosocial oncologist may have agreed with statements regarding social support because they felt that they had support from this individual.

When analyzing the correlation matrix for need for support, the strongest and significant correlation was between age and retirement; the older one gets, the more likely they are to be retired. The relationship between income and age, and income and retirement were negatively correlated. Thus, as age increases, income decreases and when an individual retires, they tend to make less money. The correlation between income and age represents a weak relationship and does not imply that aging causes a decrease in income and should be interpreted with caution. As well, the relationship between age and need for support also represents a weak negative correlation and should be interpreted with caution. The relationship between need for support and retirement represents a positive correlation, suggesting that when an individual is retired, they may need more support. Additionally, the correlation between need for support and income

demonstrate a weak negative correlation, which implies that when income increases, the need for support decreases. When individuals make more money, they may need less support from family and friends because they can afford the support they need.

When analyzing the correlation matrix for support seeking, the matrix demonstrates a weak positive correlation between support seeking and income. Similar to the interpretation of the correlation between need for support and income, when one makes more money, they may not need to seek additional support because they can afford resources for support. The correlation between seeking support, age and retirement were weak and positive. As one ages, they may need to seek support from friends and family. Researchers Mackenzie, Scott, Mather, and Sareen (2008) found that 80% of older adults in their study exhibited positive attitudes towards support seeking. Moreover, it is important to consider that older patients may have different needs than younger patients. Thus, it is imperative that caregivers and medical personnel are aware that the needs of patients may change, and they need to be prepared to aid their changing needs.

Masculinity

Although many of the patients reported that their masculinity was not affected by prostate cancer treatment, 23 patients (33.82%) reported that their masculinity had been affected. As previously discussed by Janoff-Bulman (1992), prostate cancer treatment can alter the views of patients' masculine self. While undergoing treatment, patients may experience adverse side effects such as loss of bladder control, which can be an embarrassing experience. As well, patients may experience a loss or weakening of sexual functioning, which can be emasculating. Experiencing a threat to masculinity may cause these patients extra stress; thus, it may affect their cancer treatment progression and recovery. Research previously reported by Good et al.,

(1995) suggested that men who experience a threat to their masculinity may experience more depression, emotional distress, and anxiety than those men who do not experience a threat to their masculinity. In general, these adverse reactions may lower their self-confidence and self-esteem, which may impact their ability to recover after treatment.

Additionally, thoughts regarding patients' views of their masculinity may affect their relationship with family members and the support the patient may have from these relationships. Burns and Mahalik (2006) suggested that patients may keep information about their prostate cancer and their emotions are hidden from loved ones. If the patients reported their masculinity affected by their cancer treatment are suppressing their emotions and information about their cancer treatment from their loved ones, they could be experiencing more significant stress by harboring their emotions. The added stress by hiding their feelings may impede the progression of their treatment and recovery.

Although in this study there was no significant relationship between masculinity and social support, approximately 33.82% of patients did report their masculinity impacted; therefore, it is crucial to address masculine-related concerns with patients. It is also important to explore potential sources that have led to their reports of their masculinity being affected by their cancer treatment. If sources of impacted masculinity are found, medical personnel could provide more information on the risks of how treatment may impact masculinity. Thus, patients may experience less anxiety and feel more prepared for treatment. It is also essential that these patients have the necessary resources related to their feelings of masculinity available to them. Research by Preyde et al. (2012) found that workshops provided to patients were helpful; therefore, perhaps they can add a section to their workshops regarding how prostate cancer treatment may impact their masculinity. It is also vital that care providers have the information

necessary to help patients who feel that their masculinity has been threatened or impacted due to their prostate cancer treatment.

Limitations

There were a few limitations in this study such as small sample size, threats to external validity, item nonresponse/missing data, recall bias, threats to internal validity, the type of Likert scale used and the conceptualization of masculinity. Due to the small sample size, the ability to detect statistically significant results regarding social support needs of patients was limited (Kojer Ersboll & Kojer Ersboll, 2003). The sample size was limited due to other mandatory hospital surveys conducted during the first month or so of data collection and may have affected participation. As well, the staff members have heavy workloads, and their main priority is the patients and their healthcare, which means they may not have additional time and energy to spend on research. Additionally, because participants had the option of taking the survey home and bringing the survey back at their next appointment, some participants may have forgotten to return the survey.

Second, threats to external validity was a limitation of this study. In this study, out of the 45 patients who reported their ethnicity, 44 patients identified as being Canadian or Caucasian. Thus, this study was a reflective representation of the ethnicity of the targeted age demographic in that region. A diverse sample may have resulted in varied experiences of social support needs and masculinity perceptions during their prostate cancer treatment. Moreover, most of the sample was also considered mid to high-class economic status, with at least a bachelor's degree or higher. The lack of diversity limits the ability to generalize the results of this study to other populations (Steckler & McLeroy, 2008).

Item nonresponse was another limitation of the study (Yan & Curtin, 2010). Item nonresponse occurs when participants abstain from responding to specific questions (Yan & Curtin, 2010). Results of the study indicated approximately 17% of missing data. There are a few reasons as to why there was a large percentage of missing data. First, some participants may have had a difficult time interpreting the questions. Difficulties in understanding the items may be more problematic if the participant took the survey home and could not ask a researcher to help clarify the questions. Second, participants may have felt that sections of the survey did not apply to them, such as sections relating to emotional support or masculinity. If the patients' believed that they did not experience those symptoms, many might have opted to refrain from answering that section. In addition, some questions may involve more than one component such as, "whenever I am sad, there is someone there to cheer me up". If the participant has never experienced feelings of sadness, they may choose to not answer the question, or they may be only responding to the latter part of the question. Lastly, the survey was quite lengthy, and some participants may not have wanted to answer all the questions (Kellerman & Herold, 2001). While missing data may impact the integrity of some research results may indicate nonsignificant findings due to a small amount of imputed data, Bennett (2001) suggested that by using the EM algorithm, it produces good estimates of the variability in the dataset. Alternatively, Kang (2013) indicates that using the EM algorithm may underestimate the standard errors and overestimate the level of precision in the data. Therefore, this method may suggest the data has more power than it should.

Additionally, recall bias may have been a limitation of the study (Basso, Olsen, Bisanti & Karmaus, 1997). Recall bias occurs when participants inaccurately recall information or experiences (Basso, Olsen, Bisanti & Karmaus, 1997). Researchers should consider the

difference between patients who are follow-up patients, and those that are currently receiving treatment. The BSSS questions are designed to target patients who are currently receiving treatment. Patients who have been in remission for some years may not accurately recall their experiences and feelings at the time the patients received treatment. These patients may not have remembered how they felt when they received treatment and may have opted to refrain from answering questions related to experiences they do not recall (Kirkevold & Bergland, 2007). This inaccuracy could limit the results of the study if patients cannot accurately recall those moments of support, or the patients either report vague memories or skip the questions entirely if they cannot remember. Future researchers could specifically target patients currently receiving treatment, or if the sample was large enough, researchers could test differences in experiences between those currently undergoing treatment and those in remission.

Threats to internal validity were present in this study. First, selection bias is a systematic error due to a non-random sample of the population (MediLexicon, 2018). In this study, participants were invited to participate based on the criteria that they had prostate cancer; thus, patients could not be randomly selected to a control group because all the participants had prostate cancer (Pannucci & Wilkins, 2011). As well, it may be possible that patients who had low social support chose not to participate in the study. Selection bias may impact the type 1 error rate of the study (Uschner, Hilgers & Heussen, 2018). Second, social desirability was potentially another limitation of the current study. Social desirability refers to the tendency to answer questions that may be viewed as favourable to others (Paunonen & LeBel, 2012). Linehan (1981) suggested that those who score high on the Social Desirability Scale may also score high on the Beck Hopelessness Inventory. Thus, participants in the current study who may feel hopeless about their prostate cancer treatment may respond more favourably to the social

support and masculinity questions. These patients may want to be perceived as having the support they need, and not having their masculinity affected by their prostate cancer treatment. McCann, Stewin, and Short (1991) suggest that men who report feelings of worry were significantly correlated with lower social desirability and masculinity.

As well, the use of a 4-point likert scale presents a possible limitation such as the removal of a midpoint option. Some research suggests that individuals may choose the midpoint option when responding to a socially undesirable question (Garland, 1991), or choose the midpoint option rather than a “no opinion” option (Schuman & Presser, 1996). Converse (1970) suggested that the elimination of a midpoint option when an individual lacks knowledge about the question may force individuals to choose one side or the other. Researchers who support the use of a midpoint in Likert scales suggest that the midpoint can increase the reliability of the results (Courtenay & Weidemann, 1985). In 1932, Likert proposed that the ideal number of scale options is five. Since then, five response options have been the most frequently used Likert-type scale in research.

Lastly, in this study masculinity was measured using a dichotomous yes or no question. This limits the ability to obtain an in-depth response regarding men’s masculinity. As well, no standard definition was given for masculinity; therefore, participants may have understood the question differently. As previously mentioned, masculinity is a complex construct and thus can be defined in many ways (Burns and Mahalik, 2008; Chambers et al., 2016; Hoyt, 2009).

Implications for Practice

Overall, patients in this study reported that they were receiving the support they needed or knew who they could ask for help. The goal of healthcare professionals should be to maintain

their efforts to support these patients. Ensuring that the patients are receiving the informational support and care they need is vital to their progression through their prostate cancer treatment and recovery. As previously stated, the hospital informational workshops were helpful to patients; therefore, healthcare professionals can use that time to discuss the impact of prostate cancer treatment on masculinity. Healthcare professionals should encourage their patients to speak with an on-site social worker to help work through their emotions and complexity of treatment. Some patients may not express any external signs of depression or anxiety; thus, it is imperative that every patient should receive any support resources available (Burns & Mahalik, 2006). Other forms of informational support may include pamphlets about prostate cancer, information on the various types of treatment, and what they can expect after treatment.

Since patients reported having perceived support, it may be important to investigate the support of their caregivers. Moreover, because patients may rely on family and friends to provide the support they need, it is crucial that those family and friends who are supporting their loved one with prostate cancer also feel supported. Researchers Pasek, Debska and Wojtyna (2017) investigated perceived social support and the sense of coherence in patient-caregiver dyads. Patients with cancer and their caregivers were given the Berlin Social Support Scale (BSSS) to report their scores on perceived social support that consisted of 8 items. The results indicated that patients with cancer reported having perceived social support; however, their caregivers reported lower scores on perceived social support. These results suggest that caregivers of patients with cancer receive less social support than the patients. In a previous study by Debska, Pasek, and Wojtyna (2017) they demonstrated that caregivers received less support from medical personnel. Debska, Pasek, and Wojtyna (2017) suggest that future management of cancer patients should include interventions addressed to caregivers and focus on strengthening their social support

networks. Moreover, if caregivers experience burnout, they cannot adequately provide care to patients who need support. These individuals should be provided with the necessary supports and supportive resources to help their loved ones. It is also essential that they have access to an on-site social worker to help them through the difficult times of supporting a loved one with cancer.

Finally, psychosocial factors are considered not directly pathogenic but are conditioning variables that may influence susceptibility (Kaplan, Cassel & Gore, 1977). Therefore, actions that are designed to prevent disease should include a focus on attempts to change psychosocial factors in addition to technology geared towards early detection (Kaplan, Cassel & Gore, 1977). Kaplan, Cassel, and Gore (1977) suggested the importance and practicality of strengthening social supports rather than attempting to reduce stressful situations. These researchers have also suggested that modern family medical practices should include a workup of personal networks and life stressors and should provide or help to provide more functional social networks as an integral responsibility of the health care system. Sollner and colleagues (2001) investigated the oncologists' ability to detect distress, perceive patients social support and determine whether patients needed psychosocial counselling. These researchers found that oncologists ability to detect high stress in patients was low, and their ability to perceive patients with emotional and practical support was lower. Finally, oncologists tended to underestimate the need for patients to seek psychosocial counselling. More education and training are needed for doctors to discuss social support networks with patients to determine their distress and need to refer patients to psychosocial counselling. Additionally, Kaplan, Cassel, and Gore (1977) suggest that modern work settings should take note of the need to facilitate high-morale working relationships. A final suggestion illustrates the need to have affiliative/coping assertive training to create and improve better-coping skills to help manage or modify life stressors. Coping skills workshops

would benefit patients to teach them the skills necessary to manage their distress during treatment.

Implications for Future Research

When considering the results and limitations of this study, there are a few considerations and implications as to how this study can inform future research. It is imperative that researchers allow enough time to gather data to account for work overload and other events that may arise during the research period. If possible, researchers should attempt to deliver the survey to participants before their clinical appointment, to give them enough time to complete the survey with a researcher present. This suggestion may be difficult as the project must be introduced by an individual within the patients' circle of care. Additionally, researchers may choose to sample from more than one hospital, which may allow a more comparative analysis between the different locations, as well as increase the sample size.

Second, researchers should conduct their study in a geographical location that has a diverse represented population to ensure varied experiences. Different ethnic backgrounds may have different experiences and beliefs regarding social support and masculinity ideals. A diverse sample would allow researchers the ability to generalize their findings to other diverse populations.

Third, nurses and other healthcare professionals have a heavy workload and multiple duties to perform in a day; however, it is important to contribute in some capacity to facilitate research that could potentially benefit their patients in some way. The nurses and other healthcare professionals should feel supported by their colleagues and administration staff to

contribute to research by introducing the survey to patients. Participation in the survey could benefit many individuals who currently have cancer as well as future patients with cancer.

Fourth, to reduce the amount of missing data, researchers should ensure various supports to patients to help complete the surveys. For example, researchers can stay with the participant to aid the patient in interpreting the questions or transcribe the patients' answers if they are unable to write the answers themselves. If patients choose to take the survey home with them, researchers can provide a toll-free number for patients who have questions while filling out the survey. The variety of supports may help to reduce the number of missing data in the survey to ensure questions are understood correctly and that every question is answered to investigate patients social support needs more adequately.

Fifth, researchers may be interested in asking participants after each section of questions which individual supported them during those instances. It may be interesting to explore who patients select to ask for support depending on the circumstances. This information may assist healthcare professionals and social workers to direct their resources to those individuals. Additionally, researchers should add open-ended questions to their survey inquiring about which types of supports patients find most and least helpful during their prostate cancer treatment. Patients should also list specific instances of the most and least useful forms of support, and why it was helpful or not. Understanding which forms of support are useful; and which ones are not, is essential to guide healthcare professionals and support networks to assist the patient. This information could help to design new pamphlets and informational support tools in educating supportive individuals on helpful ways to help their loved ones. Understanding this information could help lower distress in caregivers by providing helpful tips when their loved ones are first diagnosed.

Sixth, future researchers may choose a longitudinal research design to explore whether social support helps to lower anxiety, depression (mental health) and improve one's overall health over time. Measures of social support, anxiety, depression, and health could be measured at initial diagnosis, in the beginning, middle and end of treatment, and finally 3 months after treatment. Longitudinal design allows researchers to follow change over time, establish directions, and identify and relate events to exposures (Caruana, Roman, Hernandez-Sanchez & Solli, 2015). Longitudinal research can help to produce more rich, reliable and comprehensive data.

Lastly, as more men are diagnosed with prostate cancer, future research regarding social support needs and masculinity could have significant implications for healthcare professionals and hospital social workers. As the diagnosis of prostate cancer increases, healthcare workers need to be more prepared and better equipped to deal with a variety of needs (i.e., cognitive and behavioural). Additionally, researchers may explore patients' age at diagnosis and whether age affects a patients' experience of masculinity threat. Do younger males who are diagnosed with prostate cancer experience more threats to their masculinity than older patients with prostate cancer? Furthermore, researchers may ask patients why they experience a threat to their masculinity. Additionally, researchers should use a more comprehensive scale to adequately measure masculinity. As well, future researchers should either provide participants with a definition of masculinity or ask participants to provide their own ideas of masculinity and then answer the questions regarding masculinity. Researchers could investigate whether the threat to masculinity is related to sexual desire, impotence, or other origins and how it may affect their prostate cancer treatment and recovery process. The answers to these questions may lead

investigators to identify further supports patients need to overcome their threatened masculine self and distress they may experience during treatment.

Conclusions

In conclusion, in the current study, I explored the social support and masculinity of patients with prostate cancer at a regional hospital. Results suggested that most patients who are undergoing treatment at a regional Kitchener, Ontario hospital have the support they need or know of someone to support them if they need it. Most of the patients in this study reported that their masculinity was not affected by their prostate cancer treatment, and their level of income was not associated with their scores on the need for support and support seeking while controlling for age and retirement. This study contributes to our limited understanding of patients with prostate cancer and their perceived emotional, instrumental, informational, need for support, support seeking, protective buffering behaviours and received social support during treatment. The use of the multidimensional scale allowed an in-depth investigation of the various types of support that patients with prostate cancer may experience such as adding the need for support, support seeking, actually received support and protective buffering subscales. These contributions strengthen and enhance our previous understanding of prostate cancer research and patients' experiences by exploring multiple concepts of perceived social support, and their masculinity. Although there were no statistically significant results in this sample, these concepts are still important and may be present in other samples; therefore, these concepts should be further explored to help future prostate cancer patients.

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Tables and Figures

Table 1: Participant Characteristics

(*N* = 72)

Age	
Mean (SD)	73.61 (7.18)
Range	58-87
Relationship Status, n (%)	
Married	58 (82.9%)
Widowed	5 (7.14%)
Single	3 (4.3%)
Common Law	3 (4.3%)
Divorced	1 (1.43%)
Level of Education, n (%)	
Elementary School	1 (1.53%)
Some High School	7 (10.77%)
High School	23 (35.38%)
Trade/College	16 (24.61%)
Bachelors	12 (18.46%)
Masters	5 (7.69%)
Doctoral	1 (1.53%)
Yearly Household Income (in Thousands \$)	
Mean (SD)	\$77, 607.14 (\$80, 219.40)
Range	\$20,000 – \$600,000
Proximity to Clinic (in kilometers)	
Mean (SD)	26.53 km (31.17 km)
Range	0.5 – 180 km
Time Since Diagnosis (in years), n (%)	
0-5 years	45 (67.16%)
5.5-10 years	18 (26.87%)
11-20 years	5 (7.46%)
21+ years	1 (1.49%)
Occupational Status, n (%)	
Retired	55 (80.88%)
Employed	13 (19.11%)
Ethnicity, n (%)	
White/Caucasian	53 (98.14%)
Indian	1 (1.85%)
Treatment, n (%)	
Check-up	15 (21.74%)

Treatment/Radiation	21 (30.43%)
Follow-up	19 (27.54%)
Results/Discussion/Appointment	12 (17.39%)
Masculinity Affected, n (%)	
Yes	23 (33.82%)
No	45 (66.17%)

Table 2: Perceived Social Support

N= 68

Subscale	Masculinity Affected <i>M (SD)</i> (<i>N</i> = 45)	Masculinity Not Affected <i>M (SD)</i> (<i>N</i> = 23)	Total Scores <i>M</i> (<i>SD</i>) (<i>N</i> = 68)
Perceived Emotional	3.75 (0.42)	3.80 (0.34)	3.78 (0.37)
Perceived Instrumental	3.73 (0.48)	3.86 (0.40)	3.81 (0.42)
Actually Received	3.74 (0.40)	3.67 (0.33)	3.69 (0.36)
Need for Support	3.06 (0.65)	2.80 (0.73)	2.90 (0.71)
Support Seeking	3.19 (0.63)	3.04 (0.65)	3.09 (0.64)
Protective Buffering (reverse code)	2.38 (0.67)	2.10 (0.58)	2.19 (0.61)

* There were no statistically significant differences in support scores between men who reported their masculinity was affected or not by cancer.

Table 3: Reliability of BSSS

Social Support Scale	Cronbach's Alpha	Number of Items
Perceived Emotional	0.73	N = 4
Perceived Instrumental	0.92	N = 4
Need for Support	0.68	N = 4
Support Seeking	0.82	N = 5
Actually Received Support	0.76	N = 14
Protective Buffering Scale	0.75	N = 6

Table 4: Correlation Matrix for Need for Support

	Age	Retirement	Income	Need for Support
Age	-			
Retirement	*.513	-		
Income	-.009	-.004	-	
Need for Support	-.112	.023	-.073	-

* Indicates a significant relationship at $p < .01$.

Table 5: Correlation Matrix for Support Seeking

	Age	Retirement	Income	Support Seeking
Age	-			
Retirement	*.513	-		
Income	-.009	-.004	-	
Support Seeking	.125	.170	-.199	-

* Indicates a significant relationship at $p < .01$.

Appendix A

RESEARCH ETHICS BOARDS

*Certification of Ethical Acceptability of Research
Involving Human Participants*



APPROVAL PERIOD: May 19, 2017
EXPIRY DATE: May 18, 2018
REB: G
REB NUMBER: 17-04-014
TYPE OF REVIEW: Full Board
PRINCIPAL INVESTIGATOR: Preyde, Michelle (mpreyde@uoguelph.ca)
DEPARTMENT: Family Relations & Applied Nutrition
SPONSOR(S): n/a
TITLE OF PROJECT: Psychosocial and sexual health needs of patients with prostate cancer

CHANGES:

Date	Document Name	Version	Change Summary
2 Aug 2017	REB Application	2	Research Steps

The members of the University of Guelph Research Ethics Board have examined the protocol which describes the participation of the human participants in the above-named research project and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement, 2nd Edition.

The REB requires that researchers:

- Adhere to the protocol as last reviewed and **approved** by the REB.
- Receive approval from the REB for any **modifications** before they can be implemented.
- Report any **change in the source of funding**.

- Report **unexpected events or incidental findings** to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants, and the continuation of the protocol.
- Are responsible for **ascertaining and complying with all applicable legal and regulatory requirements** with respect to consent and the protection of privacy of participants in the jurisdiction of the research project.

The Principal Investigator must:

- Ensure that the ethical guidelines and approvals of facilities or institutions involved in the research are obtained and filed with the REB prior to the initiation of any research protocols.
- Submit a **Status Report** to the REB upon completion of the project. If the research is a multi-year project, a status report must be submitted annually prior to the expiry date. Failure to submit an annual status report will lead to your study being suspended and potentially terminated.

The approval for this protocol terminates on the **EXPIRY DATE**, or the term of your appointment or employment at the University of Guelph whichever comes first.

Signature:

Date: August 27, 2018

A handwritten signature in black ink, appearing to be 'Stephen P. Lewis', with a long horizontal line extending to the right.

Stephen P. Lewis
Chair, Research Ethics Board-General

Appendix B

Social Support Scale Variances

Social Support Scale	Variance (R²)
Perceived Emotional	0.004
Perceived Instrumental	0.020
Need for Support	0.033
Support Seeking	0.016
Actually Received Support	0.004
Protective Buffering Scale	0.047
Overall Emotional Support	0.015
Overall Instrumental Support	0.015
Overall Informational Support	0.014

Appendix C

Consent and Information Letter

Exploratory Survey of Patients' Experiences

You are being asked to complete a research survey that is anonymous and completely voluntary, and choosing not to take part will not affect the care you receive. The purpose of this research is to explore the psychosocial experiences and sexual health needs of patients with prostate cancer and how they would like to receive supportive care at _____. This study is not part of the therapy you may receive, and is not intended as therapy. If you agree to participate in this study, we will ask you to complete 8 pages of questions about your thoughts and experiences with cancer and support which will take about 20 minutes to complete.

There may be a risk of psychological upset with participation in this study because you are being asked about your experiences with cancer. If this occurs, the research assistant will promptly request Social Work support for you. There are no known potential benefits associated with participation in this study. By learning more about how people experience and manage the situation of receiving cancer treatment in the _____, we hope to learn how to improve the planning and care for patients. While we greatly appreciate your participation in the study, there will not be any payment for your participation in this study.

No information that discloses your identity will be collected. The information collected will be kept in a confidential locked cabinet at the University of Guelph for 7 years and then shredded. No identifying information will appear in any publications. Participation is completely voluntary. You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. You may withdraw your consent at any time and discontinue participation without penalty. Once the survey is submitted it cannot be withdrawn because the researchers cannot identify which survey is yours. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the Tri-Hospital Research Ethics Board and the University of Guelph Research Ethics Board.

Please contact Professor Preyde at mpreyde@uoguelph.ca or 519-824-4120 Ext 58599 if you would like a summary of the results.

Please find below support contact information should you experience any upset or would like to speak with someone.

HopeSpring, 519-742-HOPE (4673) or 888-680-4673, ONLY Monday & Friday 9-5, Tuesday, Wednesday and Thursday 9-9 and Saturday 9-1 at 16 Andrew Street, Unit 2, Kitchener, ON

For support at ANY TIME, please call:

Canadian Mental Health Association Here 24 Seven 1 844 437 3247

Mental Health Helpline Free Health Services Information 1-866-531-2600 (If Outside Waterloo, Wellington and Dufferin Counties)