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Quality of Life After a Prostatectomy in Men who Have Sex with Men

Jéaux Alexander Rinedahl
Walden University

Walden University

College of Nursing

This is to certify that the doctoral dissertation by

Jéaux Alexander Rinedahl

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Review Committee
Dr. Leslie Hussey, Committee Chairperson, Nursing Faculty
Dr. Carolyn Sipes, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2024

Abstract

Quality of Life After a Prostatectomy in Men who Have Sex with Men

by

Jéaux Alexander Rinedahl

MSN, Walden University, 2014

Design Plan Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

Prostate cancer (PCa) has the highest incidence rates of all cancers among men, affecting 107.5 per 100,000 men in the U.S. Treatment of PCa varies and at times includes prostatectomy, which affects quality of life (QOL) most frequently, affecting sexual, bladder, and bowel functioning. QOL among men who have sex with men (MSM) who have PCa has not been widely studied. The purpose of the study, guided by the Lazarus and Folkman's transactional theory of stress and coping, was to understand if there were differences in terms of QOL among MSM with PCa when accounting for race, partner status, and prostatectomy history. Data were collected from 131 participants using the Sexual Quality of Life–Male (SQoL-M) survey. Data were analyzed using an independent *t* test. No statistically significant differences in QOL were found in terms of race, partner status, or prostatectomy history. All participants reported they experienced some type of sexual dysfunction. Recommendations for further research are to use a different instrument that is specific to MSM who have sexual dysfunction issues due to PCa and conduct additional research with a larger sample size. Healthcare professionals need to be aware of how QOL is affected among MSM who have PCa so that care can be tailored to meet their needs, which will lead to positive social change.

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Dedication

This work is dedicated to my wonderful and awesome husband Jeff Rinedahl, who believed in my when I didn't, supported me in the worst of times, and gave me strength to continue this extremely valuable work when I had no strength of my own. Thank you Jeff, for believing in me, trusting me, and supporting me all the way to the end. Thank you for drying my tears and inspiring me to continue, when I just couldn't find the strength on my own to carry on. I am in awe of your kindness, strength, and loving heart that I get to experience every day. You truly do inspire me to be better and better every moment we are together. You are the best husband anyone could ever have or wish for, and I am eternally grateful for you in my life.

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Thank you to all the men who helped me understand what a difficult life you have had due to a prostatectomy. You had the courage to tell me your stories so that I would continue to be motivated to finish my work so that others would not have to experience what you have. Every one of you are angels in my eyes.

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Part 1: Overview

The Centers for Disease Control (CDC, 2023) reported in 2020 that prostate cancer (PCa) had the most frequent incidence of cancers among men, affecting 107.5 per 100,000 men in the U.S., and it is responsible for the second highest death rate in men due to cancer, at 18.9 deaths per 100,000 men in the U.S., followed by lung cancer. Statistically, one in nine men will receive a positive diagnosis of PCa in their lifetime (Kaler et al., 2020). PCa treatment options depend on factors including stage and invasiveness of the cancer. The primary reason a prostatectomy is performed is due to PCa (Hu et al., 2018; Ocampo-Trujillo et al., 2014; Takeshima et al., 2021). A prostatectomy is the surgical altering or removal of the prostate which often leaves the patient with sexual dysfunction due to nerve damage and/or surrounding tissue disruption (Hu et al., 2018). Many men are unprepared and uninformed about sexual dysfunction that often follows a prostatectomy and may experience permanent changes to their quality of life (QOL; Rosser et al., 2016). The most frequent symptoms affecting QOL are due to the profound side effects of prostatectomy and involve sexual, bladder, and bowel functioning (Obrey & Worsley, 2018).

Current studies are focused on men who have sex with women (MSW), with only a few qualitative studies using men who have sex with men (MSM). Following a prostatectomy, some MSM feel sexually disqualified and their sex life is over, and they no longer feel any sense of being a man (Ussher et al., 2017). Community resources and private funding opportunities could have an impact by increasing access to care and serving populations who are identified as high risk. Race, sexual dysfunction, and

relationships were used for demographic identification and data collection. Many men engage in sex with other men but do not identify as gay, bisexual, or homosexual, but rather heterosexual (Persson et al., 2019). Therefore, the term MSM was chosen as the most appropriate.

Sexual remorse, self-image, self-worth, and self-identity are relevant to anatomical and physiological changes that are experienced by men, sexual response and sexual performance issues, and sensory changes after a prostatectomy. MSM experience greater anxiety and depression, and are at a higher risk than MSW for suicide after a prostatectomy (Rosser et al., 2021). Hoyt et al. (2020) found being in a relationship made issues of disclosure and anticipated responses more difficult. Danemalm Jägervall et al. (2019) found physical changes prompted relationship status changes due to perceptions of the physical change. Rosser et al. (2021) identified being in a relationship led to greater support and improved outcomes.

There are many burden-causing variables due to sexual dysfunction among MSM such as anejaculation, climacturia, erectile dysfunction (ED), shortening of penis, decreased libido, and self-identity threats (Fenner, 2011; Mehta et al., 2019; Mostyn & Morgan, 2013; Rosser et al., 2016; Rosser et al., 2021). Increased burden of sexual dysfunction on QOL among MSM is associated with serious emotional distress, loss of self-sexual identity, and feeling disqualified sexually (Ussher et al., 2017). Clinical understanding of the importance of each variable is unknown, as the degree of burden has not previously been measured among MSM. The prostate is a reproductive organ for MSW; however, it is a sexual organ for MSM (Björkman & Persson, 2020). Shenkman

and Toussia-Cohen (2020) claimed body appearance and image are emphasized more among MSM compared to MSW, causing physical disfigurement such as shortening of the penis and ED to be more detrimental for the former group. Hartman et al. (2014) found MSM were most bothered by anejaculation and climacturia. This study of the effects of sexual dysfunction in terms of QOL among post-prostatectomy MSM is unique. There are no studies that have measured whether racial disparities exist or differences in QOL between single and partnered/married MSM. A quantitative approach was used to address acute care, community health, mental health, oncology, urology, and primary care. Research is needed to understand different degrees of burden caused by these variables.

Mehta et al. (2019) found six related themes for patients, their partners, and together as couples, which were preoperative education on sexual side effects and realistic expectations of emotional preparation for sexual dysfunction postoperatively, effective communication strategies for couples to deal with sexual concerns, sexual intimacy without intercourse, and that partner needs were supported and addressed. The final theme that Mehta et al. (2019) identified specific to MSM was a desire their HCP had improved understanding of how the identity of MSM is affected by surgery.

Qualitative measures identifying differences in QOL do not exist, however the literature does show that single MSM feel they will never find a mate and have poorer mental and behavioral outcomes of isolation and a loss of the sense of belonging (Ussher et al., 2017). MSM often enter surgery while uninformed by their healthcare practitioners (HCPs) that resulting outcomes may impact QOL due to unanticipated sexual dysfunction

(Rosser et al., 2016). HCPs may have been unaware of how these side effects from surgery disproportionately affect QOL among MSM, partly because many HCPs have not assessed the sexual identity of their patients, which may create a negative impact.

MSM are affected more deeply and have a greater degree of sensitivity due to sexual dysfunction resulting from a prostatectomy compared to MSW (Fenner, 2011). McConkey and Holborn (2018) found MSM and MSW have different needs in terms of counseling, social networking, resources, and nursing care to address mental health and emotional stability. MSM have a higher prevalence of sexual health disorders (Cheng, 2021).

Nursing skills that are required to conduct therapeutic communications regarding discussing sexual dysfunction with this population must be studied and understood to provide appropriate therapeutic education and support. Direct patient care nurses and nurse practitioners are the most supportive healthcare team members to assist during the acute phase of recovery. Patients recovering from surgery look to nurses to provide answers to questions (McConkey & Holborn, 2018). Nurses who work in mental health play important roles for MSM experiencing mental health challenges. Nurses who understand the differences between MSM and MSW can positively impact these patients. Hartman et al. (2014) noted healthcare professionals are not adept at having conversations with MSM about postoperative sexual dysfunction and recovery. HCPs rarely engage in open and meaningful discussions regarding needs that are specific to MSM due to personal beliefs, or lack of information or understanding (Rosser et al., 2016). Recognition of MSM by healthcare professionals can reduce negative sexual

orientation attitudes and discrimination, improving QOL and access to healthcare services (Değer & Kaçan, 2024)

The CDC (2023) reported that in the U.S. in 2020, incidences of PCa in Hispanic men per 100,000 was 70, 95 for White men, and 155 for Black men. The 5-year survival rate for PCa when all categories was higher among White men overall compared to Black or Hispanic men (Siegel et al., 2020).

The MSM population experiences greater disparities in terms of treatment and culturally competent care (Jennings et al., 2019). Grabski et al. (2016) found homophobia that is internalized is an indicator of lower sexual QOL among MSM. The degree of racial disparity in terms of QOL among MSM after prostatectomy is unknown due to a lack of studies, although racial differences have been well documented. The 5-year survival rate for PCa was higher among White men compared to Black or Hispanic men (Siegel et al., 2020). Kinlock et al. (2016) found Black men with PCa experiences are more devastated by their diagnosis, treatment, and outcomes than White men. Palmer et al. (2020) found Black men of African descent bear disproportionate burdens due to PCa, including dissatisfaction with care and lower QOL compared to all other ethnic groups because they have a higher prevalence of PCa (Obrey & Worsley, 2018). The mortality risk from PCa among Black men is higher than any other ethnic or racial group (Lewis-Thames et al., 2021). Literature searches have not resulted in any studies addressing how sexual dysfunction has affected QOL in post-prostatectomy MSM of different racial and ethnic backgrounds.

Hassanipour et al. (2020) found Asian men have lower survival rates for PCa than

their counterparts in North America and Europe. Data on sexual orientation are not collected by reporting agencies in the U.S.; therefore, the only means of identifying if racial inequality exists in the MSM population was through independent study. Palmer et al. (2020) found racial disparities within the MSM population after prostatectomy have not been studied; however, literature shows these groups are more likely to be diagnosed late, have less effective treatment, and have poorer outcomes due to PCa, which might affect access to care.

Penis characteristics, loss of ejaculate, ED, and urinary trouble were identified as leading to loss of QOL. However, it is not known to which variable affects MSM to the greatest degree.

Relationships influence healthcare decisions, recovery time, and rehabilitation outcomes (Capistrant et al., 2018). Some MSM experienced suicidal ideation after prostatectomy resulting from unanticipated sexual dysfunction and its associated affects; however, effects on QOL have not been measured or studied for this population. Liu et al. (2015) found strengthening social support among older and married MSM would improve QOL in China.

Results of my study have the potential to lead to positive social change that directly affects patients, families, and support persons, as well as healthcare clinicians in a positive manner that can improve lives and educate communities through understanding of MSM following prostatectomy. This will lead to comprehensive care that meets the needs of these communities and promote positive social change by identifying specific burden measures in a population that has not been studied effectively.

Background

Nurses who understand different issues between MSM and MSW can positively impact these vulnerable patients. Hartman et al. (2014) noted healthcare professionals may not be adept at having these types of conversations with MSM about postoperative sexual dysfunction and recovery. QOL was the key variable for this study.

Sexual remorse, self-image, self-worth, and self-identity are relevant to the emotional devastation which men have experienced due to anatomical and physiological changes, sexual response, and sexual performance issues. Hoyt et al. (2020) found being in a same-sex relationship made issues of disclosure and anticipated responses more difficult. Danemalm Jägervall et al. (2019) found physical changes prompted relationship status changes due to perceptions of the physical change. Rosser et al. (2021) claimed being in a relationship led to greater support and improved outcomes.

Theoretical Framework

The theoretical framework I used to ground this study was the transactional theory of stress and coping developed by Lazarus and Folkman.

Stress can be caused by a major cataclysmic event, which affects individuals, groups and communities, such as the death of a loved one or natural disaster (Lazarus & Folkman, 1984). Daily hassles are usually stressors that are typically repetitive and may seem minimal; however, cumulative effects cause stress that builds (Lazarus & Folkman, 1984). How they appraise the situation can influence how they process stress and the effects it has (Lazarus & Folkman, 1984).

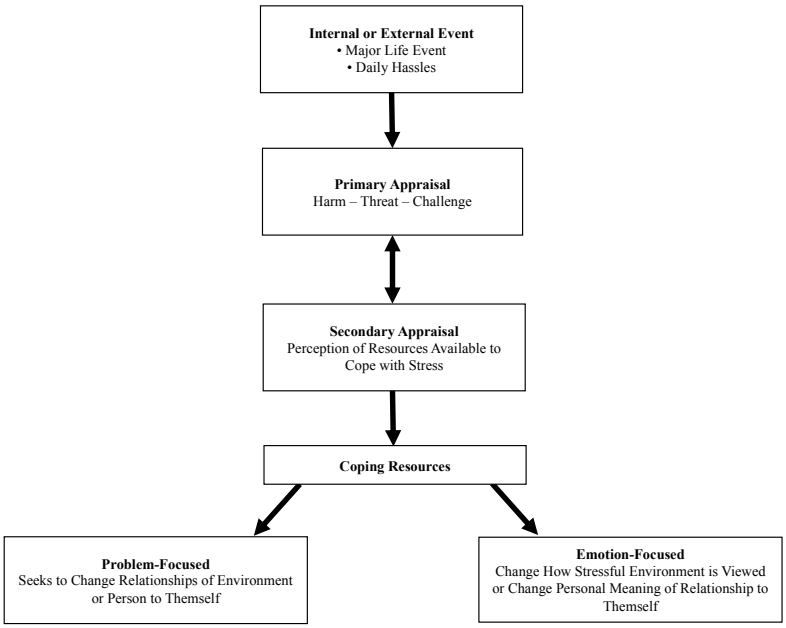
This theory was designed to assess how major life events and daily hassles

influence individual coping abilities with stress. The event or hassle causes the individual to conduct a primary appraisal and assess the level of harm, threat, or challenge the situation presents (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) noted challenges can lead to positive stress, if the individual believes they possess abilities to overcome the challenge, whereas threats and harm are situations which cause negative stress.

Individuals evaluate the significance of situations in terms of coping responses; however, although primary and secondary appraisals are influenced by each other, due to their interdependency, they may occur simultaneously (Lazarus & Folkman, 1984). Primary and secondary appraisals also have a reciprocal relationship, as the ability to cope fluctuates and changes. The coping response is either problem-focused, where the individual seeks to change their relationship with the person or environment which is causing the stress, or emotion-focused, where the individual attempts to change either personal meanings or how the stressful environment is viewed (Lazarus, 1993; Lazarus & Folkman, 1987).

Figure 1

Lazarus and Folkman's Stress and Coping Appraisal



According to Lazarus and Folkman (1984), coping refers to situations where people manage taxing demands both internally and externally, requiring some sort of coping mechanism to effectively process and deal with these demands. People manage these demands that can be compounded when their resources have been exhausted and exceed their abilities for resolve (Thomsen et al., 2010).

Effects on relationships for both patients and partners have not been explored. I used statistical data for identifying and measuring effects stress may cause on QOL.

I measured incidence of racial disparities this population experiences as well as sexual dysfunction and identified their ability to cope with the stress of changes in QOL.

Gap

I retrieved a limited number of qualitative studies on the experiences of MSM

involving QOL changes in terms of sexual dysfunction after a prostatectomy. Susman (2011) found symptom and treatment disparities and changes in sexual functioning were major components affecting QOL among MSM.

Addressing this topic can change healthcare practices by addressing how to effectively assess sexual orientation and gender identity as well as differences in treatment experience between MSM and MSW as well as clinical priorities that are specific to MSM.

Overview of the Manuscripts

This study involved addressing race, sexual dysfunction, and relationship status as three issues which need further research

Manuscript 1

Specific Problem

Black men have worse overall outcomes from PCa resulting in prostatectomies when compared to White men, which may affect their QOL (Obrey & Worsley, 2018; Palmer et al., 2020). Velasquez et al. (2018) found Hispanic men had poorer outcomes in terms of prostate cancer-specific mortality (PCSM) and higher disparities compared to White or Black men, and Hispanic and Black men were equally uninsured as compared to White men. Hispanic men are diagnosed at a later age then White or Black men; however, both Hispanic and Black men had significantly higher tumor stages and grades of cancer at the time of surgery compared to White men (Katz et al., 2018). After an extensive literature search, I did not find any studies that focused on differences involving QOL among MSM after prostatectomies by race.

Research Question

What are differences in terms of QOL by race (White, Black, and Hispanic) among MSM after a prostatectomy?

Nature of the Study and Design

I conducted a quantitative descriptive study to determine if there were difference between White, Black, and Hispanic MSM who have had prostatectomies in terms of QOL. This RQ was used to establish a racial makeup of MSM affected by this issue. Improving healthcare clinician training, clinical care as a system, and quality of treatment for minority populations is needed to reduce disparities between races (Ross et al., 2022). I planned to analyze data using analysis of variance (ANOVA) to find mean results between groups.

Sources of Data

I used two main sources for recruiting participants: Malecare.org, which hosts an international group of gay men with prostate cancer, and Facebook. Both sources had large amounts of members, and Malecare.org has been used to recruit bisexual and gay men with PCa for other studies.

Manuscript 2

Specific Problem

There is a paucity of studies that are focused on QOL in terms of sexual dysfunction in MSM communities. Issues include impotence, climacturia, anejaculation, penile shrinkage, and decreased libido (Danemalm Jägervall et al., 2019; McConkey & Holborn, 2018; Ross et al., 2022; Rosser et al., 2016; Ussher et al., 2017; Wassersug et

al., 2017). The degree to which each has affected QOL among MSM has not previously been measured.

Research Question

What are differences in terms of QOL among MSM with PCa who have had prostatectomies and experienced sexual dysfunction (anejaculation, ED, and loss of libido) compared with MSM who have or had PCa and have not had prostatectomies and experienced sexual dysfunction?

Nature of the Study

I conducted a quantitative comparative analysis study to determine if differences exist between MSM who have or had PCa and had a prostatectomy and those who had not. This generated data involving differences between these two groups. I administered a questionnaire which was available for participants to take online which included qualifier questions involving whether their prostate had been removed. The same questionnaire was distributed to MSM PCa patients, using a two tailed independent *t* test to examine differences between MSM who had a prostatectomy and those who did not. Both groups of participants had PCa. Dependent variables (DVs) were on continuous and measured using a Likert scale, and the independent variable (IVs) was whether participants had or did not have prostatectomies.

I recruited participants from social media websites to participate in an anonymous questionnaire. I used two main areas for recruiting participants: Malecare.org, which hosts an international group of gay men with PCa, and Facebook, which has a prostate cancer and gay and bisexual men group with 243 members.

Manuscript 3

Specific Problem

Effects of intimate relationships on PCa diagnosis, treatment options, and recovery have only recently been studied. Danemalm Jägervall et al. (2019) found perceived physical changes, primarily ED and anejaculation, had a lesser impact on QOL if participants were in relationships. Partnered MSM have better outcomes and make different treatment decisions when undergoing prostatectomies compared to single MSM (Capistrant et al., 2018). Communication to address MSM couples' sexual concerns, strategies to address changes in intimacy beyond sexual practices, and attention to partner needs were important to sexual recovery. Obrey and Worsley (2018) found surgery may compromise sexual roles in relationships. Wassersug et al. (2017) found partners have an important role in sexual recovery. Capistrant et al. (2018) found MSM relied on their partners for support and had better support systems overall.

Research Question

What are differences in terms of QOL between single and married/partnered MSM who have had prostatectomies?

Nature of the Study

I conducted a quantitative comparative analysis to identify if there were differences in terms of QOL and sexual dysfunction between single and married/partnered MSM who have had prostatectomies. To understand these differences, I analyzed data using an independent two tailed *t* test.

Sources of Data

I recruited participants through social media websites to participate in anonymous questionnaires. I used Malecare.org and Facebook. Both sources had a among of members, and Malecare.org has been used to recruit bisexual and gay men with PCa.

Significance

This study was significant because it included quantitative data regarding degree of burden on QOL in the MSM population.

There are many burdens that result from sexual dysfunction among MSM. Increased burden of sexual dysfunction on QOL among MSM is associated with emotional distress, loss of sexual identity, and feeling disqualified sexually (Ussher et al., 2017). Shenkman and Toussia-Cohen (2020) claimed body appearance and image were more emphasized among MSM compared to MSW, causing physical disfigurement such as shortening of the penis and ED. Hartman et al. (2014) found MSM were most bothered by anejaculation and climacturia.

This study can lead to improving patient education and allocation of resources in terms of community support groups, outreach programs, and networks.

My study was designed to provide data to better understand differences in terms of QOL between MSM who are single versus those who are in relationships, which has not been adequately studied. They have different needs in terms of counseling, social networking, resources, and nursing care in order to address mental health and emotional stability and understand different support systems and coping mechanism structures that are needed to function.

MSM often enter surgery while uninformed by their HCPs that resulting outcomes can result in serious QOL changes due to unanticipated sexual dysfunction issues (Rosser et al., 2016). Many HCPs may not know the sexual identity of their patients due to inappropriate sexual history intake (Rosser et al., 2021). Results of my study may lead to positive social change by providing new information about this previously unstudied population of MSM who have had prostatectomies.

Summary

Current literature on sexual dysfunction after prostatectomies in MSM has mostly been studied using a phenomenological exploratory qualitative approach. Quantitative studies are lacking on this subject. Some men have experienced suicidal ideation resulting from unanticipated sexual dysfunction and its associated affects; however, effects on QOL have not been measured or studied in these circumstances. A quantitative approach was needed to understand how QOL is affected among MSM after a prostatectomy by measuring the degree of burden. QOL was measured in terms of race, sexual dysfunction variables, married/single status. I addressed disparities and access to care, as well as loss of QOL due to sexual dysfunction, as well as resolutions via coping mechanism and support systems.

Part 2: Manuscripts

Differences in QOL by Race in MSM after a Prostatectomy

Jéaux Alexander Rinedahl

Walden University

Outlet for Manuscript

The peer-reviewed journal I would like to publish my manuscript in is *the Journal of Excellence in Nursing and Healthcare Practice,* sponsored by the College of Nursing at Walden University. Although the publication identifies their formatting expectation American Psychological Association (APA) 6th edition, it is most likely Formatting will be in APA 7th edition, aligning with the university's standard policies. *The Journal of Excellence in Nursing and Healthcare Practice* can be found at http://demo.waldenu.bepress.com/jenhp/.

Abstract

Prostate cancer (PCa) has the highest incidence rates of all cancers in men, affecting 107.5 per 100,000 men in the U.S. Treatment of PCa varies and at times includes prostatectomies and affects quality of life (QOL), most frequently affecting sexual, bladder, and bowel functioning. Research on QOL in men who have sex with men (MSM) who have PCa has not been widely studied. The purpose of the study, guided by Lazarus and Folkman's transactional theory of stress and coping, was to understand if there were difference in terms of QOL among MSM with PCa when comparing races. Participants were recruited from web sites. Data were collected from 131 participants using the Sexual Quality of Life-Male (SQoL-M) survey and analyzed using an independent *t* test which showed no statistically significant differences in terms of QOL between races. All participants reported they experienced some type of sexual dysfunction. Recommendations for further research were to develop an instrument that was specific to the MSM population with sexual dysfunctions due to PCa, and conduct additional research with a larger sample size. Healthcare professionals need to be aware of how QOL affects MSM who have PCa so that care delivered to MSM can be tailored to meet their needs, which will lead to positive social change.

Introduction

The Centers for Disease Control (CDC, 2023) reported in 2020, prostate cancer (PCa) had the highest incidence of all cancers in men, affecting 107.5 per 100,000 men in the United States (U.S.), and remains the second highest death rate in men due to cancer, at 18.9 deaths per 100,000 men in the US, only followed by lung cancer. Statistically, 1 in 9 men will receive a positive diagnosis in their lifetime of PCa (Kaler et al., 2020). Ocampo-Trujillo et al. (2014) found that PCa treatment modalities varied with severity of the disease and that the only surgical option is a removal of the prostate. PCa is the most diagnosed non-cutaneous cancer for which surgical removal of the prostate (prostatectomy) is considered one of the most appropriate treatments (Roberts et al., 2019).

Obrey and Worsley (2018) found the side effects of a prostatectomy can affect the QOL of men who have had a prostatectomy for many years. A literature search for QOL in men who have had a prostatectomy yielded studies using men who have sex with women (MSW) and their wives as participants. Only a small number of studies using MSM as participants resulted from the search, all of which were qualitative.

Studies of QOL in PCA subjects using MSW are plentiful, however do not identify the difference between MSW and MSM and. The difference between MSM and MSW is that the prostate is a sexual organ in MSM (Björkman & Persson, 2020). This difference is important as a guiding principle in the general understanding of why QOL changes from the sexual dysfunction caused by a prostatectomy creates a greater burden in the MSM population as compared to MSW (Rosser et al., 2022).

I chose the term MSM to represent all men who are homosexual, bisexual, or heterosexual, who have sex with other men. Although sexual orientation is not a qualifier/disqualifier for this study, how various participants experience sexual activity will be key to understanding this phenomenon. Nurses who work in mental health play important roles for MSM experiencing mental health challenges (Hughes & McDermott, 2020). Hartman et al. (2014) noted that health care professionals are not adept at having conversations with MSM about post-operative sexual dysfunction and recovery.

The CDC (2023) reports that in the U.S. in 2020, the incidence of PCa in Hispanic men per 100,000 was 70, White men per 100,000 was 95, and Black men per 100,000 was 155. The CDC showed that the five-year survival rate for PCa when all categories was higher among white men overall than the results for Black or Hispanic men (Siegel et al., 2020). The MSM population further experiences greater disparities in treatment and culturally competent care (Jennings et al., 2019), adding additional risk for poor QOL. The degree of racial disparity in QOL in MSM from a prostatectomy is unknown due to a lack of studies. Racial disparities exist in the Black and Hispanic communities in a variety of health care settings (Shannon et al., 2021), greater perceptions of negative care (Liebert, 2021), and a higher incidence of mortality, lower QOL, and undertreatment of disease (Palmer et al., 2020). Kinlock et al. (2016) found Black men suffer worse in diagnosis, treatment, and outcomes from PCa than white men. Palmer et al. (2020) found that Black men of African descent bear disproportionate burden from PCa, such as dissatisfaction with care, and a lower QOL than all other ethnic groups because African Americans have a higher prevalence of PCa (Obrey & Worsley, 2018), and the mortality

risk from PCa in Black men is higher than any other ethnic or racial group (Lewis-Thames et al., 2021). Literature searches have not resulted in any studies on how sexual dysfunction affected the QOL from a prostatectomy in MSM of different racial and ethnic backgrounds.

Data on sexual orientation are not collected by reporting agencies, therefore the only means of identifying if racial inequality exists among the MSM population is through discovery from independent study. Palmer et al. (2020) found that racial disparities within the MSM population post prostatectomy have not been studied, however the literature shows these groups are more likely to be diagnosed late, have less effective treatment, and have poorer outcomes from PCa, which might affect access to care.

Significance/Importance

Significance to Discipline

The MSM population is a disadvantaged group, and associated with widespread societal stigmas (Rosser et al., 2021). Healthcare concerns of MSM are marginalized and invisible to health care professionals (Obrey & Worsley, 2018), creating the need to identify if differences in racial disparities exist to fully understand the impact on QOL. Kinlock et al. (2016) reported that Black men have twice the death rate of either White or Hispanic men, with a 70% increased risk over White men from developing PCa. The time laps between diagnosis and treatment for PCa is greater in Back men than in White or Hispanic men (Kinlock et al., 2016). Research identifying if racial differences (Black, White, and Hispanic) in MSM exist, could provide information to reduce the impact and

disproportionate severity of outcomes, better understanding the needs of MSM and their QOL after a prostatectomy. My study is significant because I examined differences among ethnic groups of MSM (Lillard et al., 2022).

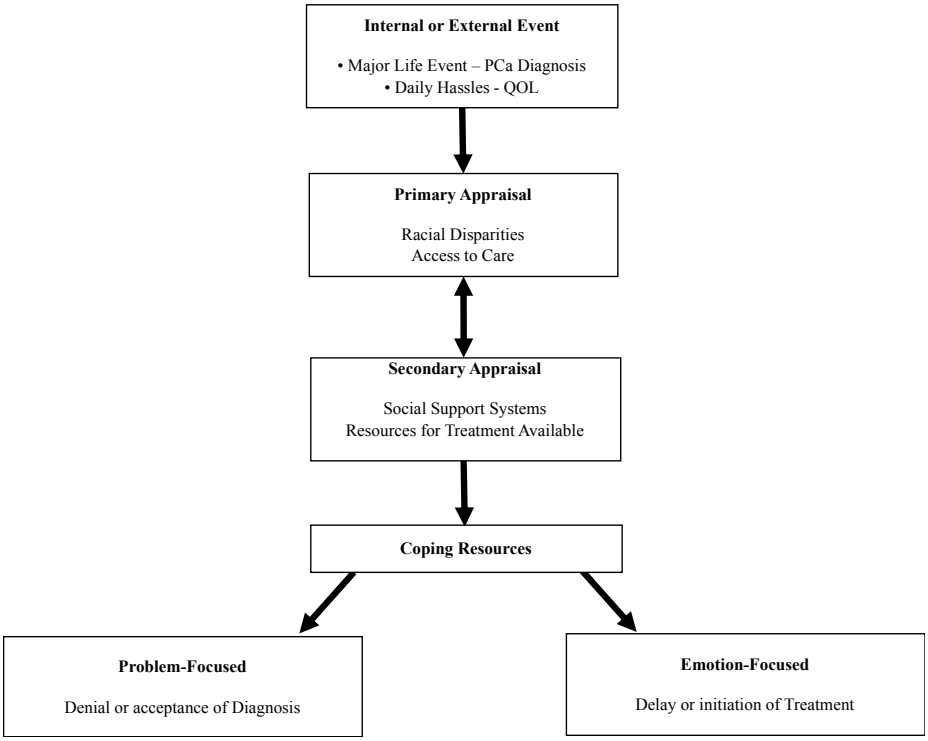
Theoretical Framework

Stress has become recognized since the 1960's as a part of daily life however the coping skills one employs is the difference in adaptational outcomes (Lazarus, 1966). I chose the transactional theory of stress and coping developed by Lazarus and Folkman (1984) to guide my study. Stressful situations with major life changing outcomes, and stressors which cause daily hassles and frustration can be viewed as external and internal events (Lazarus & Folkman, 1984).

The structure of assessing major life events and daily hassles shown in Figure 1, provides a framework to understand the effects of internet external events. The initial step in identifying the major event is to conduct a primary appraisal where the level of harm is assessed in comparison to the threat which can also be a challenge to the situation presented (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) also noted that the challenges experienced by the individual can be a positive influence as an opportunity to overcome the challenge (see Figure 1).

Figure 1

Lazarus and Folkman's Stress and Coping Appraisal (Race)



Secondary appraisal consists of assessing if social systems and resources are available to assist in access to care. Primary and secondary appraisal can occur simultaneously as situations continue to change, and information is evaluated (Lazarus & Folkman, 1984). At this stage, the individual develops their coping responses as being either problem-focused or emotion-focused (Lazarus & Folkman, 1984). If the response to the stressor is problem-focused, the individual will attempt to change their relationship with either the person, or the event causing the stress, however an emotion-focused attempt would be to change the personal meaning of how the environment is viewed or how stressful the environment is to the individual (Lazarus & Folkman, 1984). In primary appraisal, threats and challenges are met by racial disparities and their ability to access

health care needs (Lee et al., 2021).. Problem-focused coping resources can include decisions to accept or deny the diagnosis of PCa, as emotional-focused coping resources can include the decisions around initiation of treatment. Lazarus and Folkman's theory supports the literature by Palmer et al. (2020), Liebert (2021), and Shannon et al. (2021), identifying racial disparities in health care resulting in treatment delays and the stress caused by racial inequality.

Original Contribution

The results of my study will potentially create positive social change through an understanding of the difference in MSM by race, who have been affected by the changes in their QOL as a result of a prostatectomy. Changes to QOL may have a greater impact on MSM of different races, however different races have not been studied quantitatively. The difference in QOL in MSM from sexual dysfunction, emotional and physical challenges, and intimacy challenges from a prostatectomy may threaten the ability for these men to fulfil their established roles (Obrey & Worsley, 2018). How a prostatectomy may affect the QOL differently by race in MSM has not been studied. Understanding what specific challenges different races experience, and the degree their QOL is affected post-prostatectomy can help to provide educational and supportive resources to reduce the burden and improve QOL. Determining the effect of prostate cancer on QOL by race in MSMS contributed to professional knowledge. Understanding the differences in MSM, private and public health practitioners can use the information to effect a change in clinical practice.

This information can inform and contribute to professional knowledge by

providing data to guide development of assessment tools to further evaluate the individuals needs of single and couples. Through understanding of the differences between Black, Hispanic, and White MSM, private and public health practitioners can use the information to effect a change in clinical practice.

Purpose of Research

The purpose of this study was to determine if there is a difference in QOL by race (White, Black, and Hispanic) in MSM after a prostatectomy.

Relevant Scholarship

Synthesis of Relevant Evidence

Race is an important factor in diagnosis, prognosis, and treatment; and there is value in understanding if there are differences in the QOL among White, Black, and Hispanic MSM (Rosser et al., 2021). Minority MSM have a higher incidence of cancers, with PCa being the highest incidence in MSM, but are more likely to have lower cancer screening rates, fewer support systems, greater distress, worse health, be under or uninsured and poorer QOL than MSW (Rosser et al., 2016; Rosser et al., 2021. Krimphove et al. (2020) pointed out that the term, Hispanic, refers to a heterogeneous group of Spanish Speakers in the Americas, however, have a lower overall incidence and mortality rate of PCa than Black and White men. Guerrios-Rivera et al. (2021) found that Hispanic men who had a prostatectomy did not have worse outcomes than White men. The main themes that Obrey and Worsley (2018) found were sexual impact, physical and psychological difficulties, challenges to intimacy, and support mechanisms. Danemalm Jägervall et al. (2019) identified that physical, sexual and sensation changes, self-identity,

and relationships all affected QOL in MSM with PCa. Similarly, McConkey and Holborn (2018) found loss of sexual and masculine identity were issues affecting the QOL in MSM. None of these studies compared racial differences related to QOL in their findings.

Black men have worse overall outcomes from PCa resulting in a prostatectomy as compared to White men which may affect their QOL (Obrey & Worsley, 2018; Palmer et al., 2020). QOL concerns of MSM are marginalized and invisible to health care professionals (Obrey & Worsley, 2018) creating the need to identify if there are differences in QOL among Blacks, Hispanics, and White MSM after PCa and a prostatectomy.

Qualitative studies used smaller sample sizes, therefore larger sample sizes are needed to quantitatively measure if there is a relationship to race and QOL in MSM who have had a prostatectomy (Rosser et al., 2021). Since few studies have compared the QOL specific to post-prostatectomy MSM of different races, I conducted my study to determine if there are differences in QOL by race (White, Black, and Hispanic) in MSM after a prostatectomy.

Gap in Research

I performed various literature searches using multiple sources of literature databases and key words, however the searches produced no studies that focused on how the relationship of race in MSM after a prostatectomy.

Research Questions and Design

Research Question

My research question was, “What is the difference in QOL by race (Black,

Hispanic, and White) in MSM after a prostatectomy?". The null hypothesis was , there is no difference in QOL by race (White, Black, and Hispanic) in MSM after a prostatectomy. The alternative hypothesis was, there is a difference in QOL by race (White, Black, and Hispanic) in MSM after a prostatectomy.

Approach to Address Problem

I conducted a quantitative comparative analysis which is used to identify casual relationships between the dependent variables and independent variables (Pickvance, 2020). Casual relationships are unable to be observed, making them a matter of inference (Pickvance, 2020). Two conditions to be met for comparative analysis are the data must be collected from two or more different groups, and an attempt to explain must be made, not simply to describe (Pickvance, 2020).

Methods

Participants

Target Population

The target population for this study was MSM who were White, Black, and Hispanic who have had a prostatectomy. I studied this population to understand if there is a relationship between QOL in MSM among different races who had not had a prostatectomy in comparison to different races of MSM who had a prostatectomy.

Sample and Power

Sampling Strategies

I planned to recruit participants through social media posting on two websites. Malecare.org is an advocacy organization with a website designed specifically for men

with PCa, hosting the largest men's cancer support group (Capistrant et al., 2018). The site claims the community consists of 77,492 members, with a subgroup community of MSM diagnosed with PCa at 1,217 members (Malecare, 2021). Another source for recruitment was Facebook, which has a specific group: Prostate Cancer and Gay Bisexual Men and Transgender Women, and state they have a following of 320 members. Facebook and Malecare.org also provide a forum for men and transgender women who are preparing for a prostatectomy, have recently had a prostatectomy, and those who have had a prostatectomy and are seeking advice for advanced sexual and psychosocial issues from other members. I submitted my survey to the Walden University Participant Pool to search for participants. I created a recruitment flyer to invite individuals to participate in my study (See Appendix A).

Survey Monkey was used to host the questionnaire process, allowing direct access to results for entering in SPSS as surveys were completed. I sought permission from Malecare to allow the survey to be available to all their members via email and via the Malecare e-newsletter. I provided a brief synopsis of the study inclusion criteria and directed members who were interested to click on a link that took the individual to the website where a description and purpose of the study was provided, including all rights and responsibilities of participation. The individuals saw screening questions which were:

Have you been diagnosed with prostate cancer?

Do you have sex with men?

If the individuals answered 'yes', to both questions, they were eligible to take the survey. Once eligibility was confirmed by answering 'yes' to these questions, the next screen

advanced the induvial to an informed consent. The participant was instructed to continue to the next screen if they agreed to the consent, which included the demographic questionnaire (see Appendix B). When the participant answered the demographic questions, the screen advanced to the full survey which was the Sexual Quality of Life - Male (SQoLM). Once the participant completed the survey, they were thanked for their time, and the screen closed. The incoming survey results were entered directly into SPSS for analysis.

A Priori Procedures

To identify the correct sample size for the statistical power for the a priori measures, I used the online UCLA Advanced Research Computing (2023) G* power to calculate the correct sample size for an ANOVA with three independent variables (IV) of race, and one dependent variable. The effect size was (f) of 0.25, an alpha of error probability of 0.05, a power of 0.8, and three groups yielded a sample size of 269 (90 for each group).

Variables/Sources of Data

Relationships Between Variables

The IV was race (Hispanic, Black, and White) and the DV was QOL.

Data Sources to Operationalize Variables

I operationalized the IV by asking the participants to record their race on the demographic data sheet. I operationalized QOL as a normal overall functioning with a feeling of overall satisfaction and value on their life (Liu et al., 2021), and measuring QOL using the SQoL-M created by Pfizer Ltd and owned by IQVIA Instrument Services

(see Appendix C).

Instrumentation or Measures

I chose the SQoL-M which is an 11-question survey which asks the participants about their feelings of their sexual life. The SQoL-M is scored on a six-point Likert scale.

Design and Analysis

Research Design

I chose SPSS version 28 to analyze the data using the ANOVA test to compare the means of three unrelated groups with the same continuous DV (Laerd Statistics, 2018c). The measure of central tendency for use with an ANOVA test is the mean value, which compares the difference between three groups that are unrelated (Laerd Statistics, 2018c). The mean of the groups of MSM of different races were to be compared to each other. I calculated a Cronbach's alpha to measure of internal consistency of the SQoL-M (Laerd Statistics, 2018a). Cronbach's alpha provides an overall reliability coefficient in SPSS for the set of questions, which served as an inter-rater reliability of the survey scale (Laerd Statistics, 2018a).

Central Analytical Strategies

According to Laerd Statistics (2018c) there are 6 assumptions that must be met to establish that ANOVA is the correct parametric test to use. Assumption #1 requires the DV to be measured in interval or ratio data. The survey uses a Likert scale to assess continuous QOL data ranging from 1-6. Ordinal data is measured by intervals in numerical form, however, do not specify the value between the intervals (Simon & Goes, 2013). The participants choices were, completely agree (1), moderately agree (2), slightly

agree (3), slightly disagree (4), moderately disagree (5), and completely disagree (6). Fulfilling assumption #2 requires two or more IV groups that are both categorical, and independent. Participants were asked to choose only 1 race; therefore, no participant was in more than one group. Assumption #3 requires a study design with independence of observations. There was no occurrence of one observation which provided information about the occurrence of any other observations for this study. The survey was administered at a single point in time, and was not compared to any other measures. Assumption #4 states significant outliers should not be present in the data points. If outliers were present in the data, I would have removed the outliers, and used SPSS to rerun the ANOVA to evaluate if the results are the same. If the results are the same, I would report the analysis of the full data, however, also report that the outliers were not influential. Assumption #5 states the DV should be distributed normally in each category measured against the IV. I tested for normality using SPSS, by analyzing, using descriptive statistics, explore, plots, and normality plots with tests. Norman (2010) pointed out however, that according to the Central Limit Theorem, regardless of the original distribution, a sample size of greater than five or ten participants per group will have a mean that is mostly distributed evenly.

Assumption #6 identifies homogeneity of variances must be met. The Levene's test tests the variance of the groups. If the Levene's test was significant, a I would have used a Welch test.

Research Design Justification

Justification for the ANOVA is found in the simplicity of measuring the mean of

the results from a survey of three groups. I planned to measure the QOL mean of three group of MSM (Black, Hispanic, and White) who had a prostatectomy, to compare the results among all three groups. Using 3 groups to compare the means is best accomplished using the ANOVA test when the curve is evenly distributed and follows a standard shape (Laerd Statistics, 2018c). I analyzed the SQOL-M with Cronbach's alpha to measure reliability.

Results

Execution

I recruited participants who met the criteria for my study to take a 5 – 7 minute online survey administered through Survey Monkey. I used the SQoL-M survey developed by Pfizer and owned by IQVIA Instrument Services (see Appendix C). The 11-question survey was completed after two qualifying questions of, “Are you a man who haves sex with men,” and, “Have you ever been diagnosed with prostate cancer?” A third question was asked if the participant had their prostate removed surgically (prostatectomy). A participant was required to answer ‘Yes’ to the first two questions to qualify for the study. Once the participant positively answered the qualifying questions, they were taken to the next screen containing 9 demographic questions, and 5 sexual dysfunction symptoms the participant identified if they experienced.

I designed the study around three sources for recruitment of participants. IRB approval (#04-28-23-0346016) was granted. I planned to recruit from the Walden University student pool, Malecare.org, and Facebook’s Gay and Bisexual Men’s PCa group. I contacted the administrator for the Facebook page via email and requested

permission to post a flyer advertising the study with a link to the survey. Permission was granted 4 weeks later, and the recruitment flyer was posted May 2023. I emailed the study to the web administrator for Malecare.org who previously requested information however he did not to respond to repeated emails requesting to post the flyer to their website. By August 2023, 54 participants had responded which would not generate enough surveys to meet the G*power to validate the study. I received approval from the IRB for three additional submissions in August 2023 and September 2023, to post the study flyer on the websites for SAGE, the National LGBT Cancer Network, and the Seattle Gay News. All three agencies posted the study flyer to their websites. Six months was given for the length of the survey, which closed on November 15, 2023.

The number of qualifying participants who started but did not complete the survey increased in September 2023. In October 2023, I discovered that a functional error had occurred with the survey, and that due to the 'logistics' function, it was not allowing participants to complete the survey section of the questionnaire. Once the issue was discovered and resolved, the postings were refreshed on the Facebook page, and the number of surveys from qualified candidates increased.

Upon closure, I had 217 surveys that were started. A total of 131 qualified surveys were completed and accepted for analysis, and 86 surveys were incomplete. The incomplete surveys had an even split of 43 each for those who took the survey and did not qualify, or started the survey and qualified, but did not complete it. There may have been due to the logistics error in the survey. I further split the selected cases to create a data set on only those participants who had undergone a prostatectomy. A total of 67

participants qualified for this study.

Results

My original design was to conduct an ANOVA test to compare the means between White, Black, and Hispanic races. The IRB requested that I include more choices in the race section of my demographic data sheet. I added American/Alaska Native, Asian/Pacific Islander, and Other, to the demographics.

The results were White (n=51), Black (n=10), Hispanic, (n=0), American Indian/Alaska Native (n=2), Asian/Pacific Islander (n=3), and Other (n=1). Because the response rate of White participants was n=51 (76.1%), I combined Black, Hispanic, American/Alaska Native, Asian/Pacific Islander, and Other into a new group and labeled it 'New Race.'

Table 1

Race

New Race

	N	%
White	51	76.1%
Non-White	16	23.9%

Note: Racial demographics of participants.

With the race group combined into two categories, I analyzed the data using an independent samples *t* test using SPSS version 28, to determine if there was a difference in QOL among White and Non-White MSM who have had a prostatectomy. I tested the assumptions for the independent *t* test.

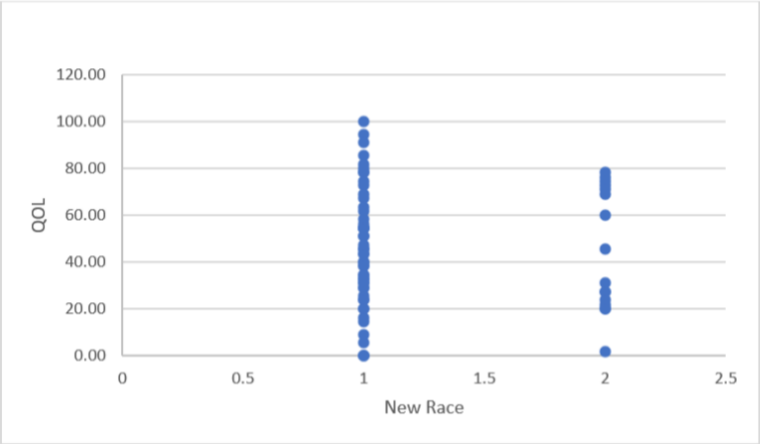
Assumptions #1 through #3 for *t*-test validation were met. The dependent variable (DV) is a continuous variable of the QOL scores each participant provided, and the two independent variables (IV) of race are categorical. The dependent variable groups are independent, as no participant can be in both White and non-White categories. Assumption #4 was met as no significant outliers were present in the data points (see Figure 1).

Assumption #5 requires that the DV is relatively distributed in a normal curve for each group of the IV. This assumption was not met as the participants were largely White, leading to combining the other race groups to create one larger group for comparing means. Assumption #6 of homogeneity of variances was met. I calculated a Levene's test for equality of variance ($p = .508$).

I created a scatter plot which shows the dispersion of the QOL scores for the White group had a range between 0 and 100 with a wide distribution, while the non-White group had a range between 20 and 80, with 2 concentrated groups in the 20's and 70's (see Figure 2).

Figure 2

Scatterplot QOL and Race



Note. 1 = White, 2 = Non-White

Because assumption 5 was not met, I ran a Mann-Whitney U test to determine if there were differences in QOL between White and non-White participants. The Mann-Whitney U test is a nonparametric alternative to the independent-samples *t*-test that can be used when data does not meet the assumption that there are differences between two groups on a dependent variable that can be continuous or ordinal (Laerd Statistics, 2018b). Distributions of the QOL scores between White and non-White participants were similar as assessed by visual inspection. The QOL score was not statistically significant between White and non-White participants, U = 393.5, z = -0.213, $p = 0.83$ (see Table 2).

Table 2

Independent Samples Mann-Whitney U Test Summary

Total N	67
Mann-Whitney U	393.500
Wilcoxon W	529.500
Test Statistic	393.500

Standard Error	67.965
Standardized Test Statistic	-.213
Asymptotic Sig.(2-sided test)	.831

Discussion

Interpretation

My findings do not support previous results. Palmer et al. (2020) found that Black men have a poorer quality of life and have a higher dissatisfaction with their care. Obrey and Worsley (2018) pointed out that due to sexual and societal differences, MSM minorities are likely to experience greater general impact emotionally and physically than MSW. I found that QOL was similar between the White and Non-White groups.

Limitations

There were limitations to my study. The sample size was small and did not meet power analysis. Sample size was limited due to technical issues with distribution of the survey, and the majority of the sample were of one race which limited the ability to compare QOL across multiple races.

Another limitation was the instrument. The SQoL-M questionnaire is a tool which has been validated through use in other studies, however the instrument has not previously been used in this population or addressed QOL in MSM who have had a prostatectomy. Most of the existing validated tools used to measure QOL and male sexual dysfunction focus primarily on erectile dysfunction, and no other QOL issues, therefore the SQoL-M survey was chosen for this study. The limitations of the instrument were

known.

Implications

The implications for positive social change impact from my study are the collection of quantitative data that my study is starting to address in the gaps in the literature. The effects on QOL between races in this population have not previously been studied quantitatively (Haggart et al., 2021), however my results have provided new information on MSM and QOL after a prostatectomy. All 131 participants had PCa, 67 had a prostatectomy. All participants were asked to identify if they had experienced any of five sexual dysfunctions identified by qualitative research (ED, loss of libido, change in size/shape of penis, climacturia, and anejaculation). Participants in both groups experienced some type of sexual dysfunction. QOL in these two groups may be similar after a prostatectomy, because the effects on QOL between races in this population have not previously been studied quantitatively (Haggart et al., 2021). My results have provided new information on MSM and QOL after a prostatectomy. An additional implication for positive social change impact is the discovery that the SQoL-M questionnaire is not the most appropriate tool for assessing QOL in MSM post prostatectomy. I have identified a need for a new instrument to be developed which addresses sexual dysfunctions that most commonly affect MSM postoperatively from surgeries affecting sexual organs. Understanding that the QOL may not be different between races gives an opportunity to design an instrument which includes other areas that are affected by sexual dysfunction, rather than QOL. The Expanded Prostate Cancer Index Composite may be an effective tool to measure QOL, however is not specific to a

prostatectomy, and addressed multiple treatments and bowel function.

Empirical implications are for health care professionals to continue focusing on physical recovery as well as challenges and barriers individuals experience, rather than how to improve their QOL (O'Hara et al., 2021).

Recommendations

A major recommendation which came from the study is the need to develop an appropriate instrument with the potential to accurately capture data on post-surgical MSM. An effective instrument tool would greatly assist in the understanding of the challenges and barriers this population experiences, and should be designed to include surgical procedures which affect the QOL from sexual dysfunctions resulting from surgery.

I recommend repeating this study with a larger variety of multiracial participants to ensure accurate assessments of the QOL in the minority MSM population. A larger group of participants would provide more than two categories that can be measured using an ANOVA test, and would reveal any disparities within the non-White races. I recommend a similar study be repeated with a focus on racial minority participants to identify if this phenomenon is accurate in non-White groups.

Conclusion

In 2020, the topic of how the QOL of MSM post prostatectomy from the sexual dysfunction was becoming more common amongst my patients while receiving chemotherapy. Severe surgical remorse and mental/emotional challenges were experienced by MSM post prostatectomy from sexual dysfunctions (Rosser et al., 2016).

The experiences these men were living are not know to the greater health care community. Most men entering surgery were unaware of the postoperative sexual dysfunctions as a risk of a prostatectomy.

Liebert (2021) found that minorities experience disparities in health care, while Zhu and Wittmann (2020) found multiple overlapping psychosocial and healthcare system barriers to sexual recovery after PCa treatment. Racial minorities in a population which is also a minority, presents the ability to concentrate multiple disparities in health care.

Statistical significance was not achieved. Results may have been affected from the unequal distribution of participants between the two groups (White and non-White MSM). Both groups had similar means of QOL. Non-White MSM QOL scores were clustered fairly even between 'moderately low' (20% to 30% range) and 'moderately high' (75% to 80% range). The White MSM group scores had an even distribution between 0% to 100% on the QOL scale (see Figure 2). It is possible that QOL may not be the most concerning outcome of a prostatectomy, and future study might focus on surgical recovery needs. Development of a new instrument, and a more aggressive marketing approach with funding to attend events for participant recruitment may be key in recruiting more participants, increasing the potential for achieving statistical power for validity.

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Differences in QOL Among MSM with PCa Post Prostatectomy Versus MSM with PCA

Jéaux Alexander Rinedahl

Walden University

Outlet for Manuscript

The peer-reviewed journal I would like to publish my manuscript is *LGBT Health,* which is published by Mary Ann Liebert, Inc. The journal does not explicitly identify particular formatting requirements; however, it follows the Vancouver style, which is also referred to as ICMJE and Uniform Requirements Style. The website offers a publishing template for submissions. This journal focuses on the health and wellness of the gay, lesbian, bisexual, and transgender (LGBT) population, which is the population for my study. Information regarding this publication can be found at https://home.liebertpub.com/publications/lgbt-health/618/.

Abstract

Prostate cancer (PCa) has the highest incidence of all cancers in men, affecting 107.5 per 100,000 men in the U.S. Treatment of PCa varies and at times includes prostatectomy and affects quality of life (QOL), most frequently affecting sexual, bladder, and bowel functioning. QOL among men who have sex with men (MSM) who have PCA has not been widely studied. The purpose of the study, guided by Lazarus and Folkman's transactional theory of stress and coping, was to understand if there were differences in terms of QOL PCa between MSM with PCa who have had and did not have a prostatectomy. Participants were recruited from a variety of web sites. Data were collected from 131 participants using the Sexual Quality of Life – Male (SQoL-M) survey. Data were analyzed using an independent *t* test. No statistically significant differences in QOL were found between MSM who have and did not have a prostatectomy. All participants reported they experienced some type of sexual dysfunction. Recommendations for further research are to develop an instrument that is specific to the MSM population with sexual dysfunctions due to PCa, and conduct additional research with a larger sample size. Healthcare professionals need to be aware of how QOL is affected among MSM who have PCa so that care can be tailored to meet their needs, which will lead to positive social change.

Introduction

The Centers for Disease Control (CDC, 2023) reported in 2020, prostate cancer (PCa) had the highest incidence of all cancers in men, affecting 107.5 per 100,000 men in the U.S., and the second highest death rate in men due to cancer, at 18.9 deaths per 100,000 men in the U.S., following lung cancer. Treatment options for PCa consist of various modalities depending on multiple factors, including stage and invasiveness of the cancer. The primary reason a prostatectomy is performed is due to PCa (Hu et al., 2018). This is the surgical altering or removal of the prostate which often leaves the patient with sexual dysfunction due to nerve damage and/or surrounding tissue disruption (Hu et al., 2018).

Quality of life (QOL) is a measure of overall satisfaction and value of life in cultural contexts (Min-Hui et al., 2021). Side effects include sexual, bladder, and bowel functioning (Obrey & Worsley, 2018). Current studies are focused on men who have sex with women (MSW), with only a few qualitative studies focused on men who have sex with men (MSM). Following a prostatectomy, some MSM feel sexually disqualified and their sex life is over, and no longer feel any sense of being a man (Ussher et al., 2017).

QOL changes due to sexual dysfunction caused by prostatectomies lead to burdens that are greater in MSM populations compared to MSW. Shenkman and Toussia-Cohen (2020) claimed shortening of the penis and erectile dysfunction were more detrimental to MSM. Hartman et al. (2014) found MSM were most bothered by anejaculation and climacturia.

Gay and bisexual men were used for data collection; the term MSM was chosen

as the most appropriate. Many men engage in sex with other men but do not identify themselves as gay, bisexual, or homosexual, but rather heterosexual (Persson et al., 2019). For these reasons, I chose the term MSM to be inclusive of all sexual orientations, preferences, and practices.

Nursing care involves pre- and postoperative patient education involving physical and functional changes and holistic caring for the mind, body, and spirit (Frisch & Rabinowitsch, 2019). Direct patient care nurses and nurse practitioners are the most supportive healthcare team members to assist during the acute phase of recovery (McConkey & Holborn, 2018). Patients recovering from surgery look to nurses to provide answers to questions and what is to follow (McConkey & Holborn, 2018). Nurses who work in behavioral health play important roles for MSM experiencing mental health challenges (Hughes & McDermott, 2020). Hartman et al. (2014) noted healthcare professionals are not adept at having conversations with MSM about postoperative sexual dysfunction and recovery. Mehta et al. (2019) found areas where provider-generated education failed to address specialized needs of MSM included discussions about sexual side effects that occur before treatment, improved and effective communications that involve sexual concerns couples experience, alternatives to sexual intimacy that do not involve intercourse, attention to the needs of partners, and provider understanding that sexual needs are different from MSW. Current literature searches reveal no studies have measured the degree of burden of these explanatory variables. A quantitative approach was used to address the impact on acute care, community health, mental health, oncology, urology, and primary care. Research is needed to quantify importance and

understand variables.

MSM often enter surgery uninformed by their healthcare practitioners that resulting outcomes will lead to serious QOL changes due to unanticipated sexual dysfunction because they were not given appropriate or complete information preoperatively (Rosser et al., 2016). Healthcare practitioners (HCPs) have been unaware of how these side effects from surgery disproportionately affect the QOL in MSM, partly because many HCPs do not know the sexual identity of their patients due to inappropriate sexual history intake (Rosser et al., 2016). MSM are affected more deeply and with a greater degree of sensitivity from the sexual dysfunction resulting from a prostatectomy than MSW (Fenner, 2011). McConkey and Holborn (2018) found that MSM and MSW potentially have different needs for counseling, social networking, resources, and nursing care to address mental health and emotional stability.

Nursing care involves pre-operative and post-operative patient education including physical and functional changes, and wholistic caring for the mind, body, and spirit (Frisch & Rabinowitsch, 2019). Nursing skills required to conduct therapeutic communications regarding discussing sexual dysfunction with this population must be studied and understood to provide appropriate and therapeutic education and support. The knowledge a nurse provides is paramount when dialogue has been absent by HCP (McConkey & Holborn, 2018). Direct patient care nurses and nurse practitioners are the most supportive health care team members to assist in the acute phase of recovery (McConkey & Holborn, 2018). Patients recovering from surgery look to nurses to provide answers to questions and a deeper meaning of what is to follow (McConkey &

Holborn, 2018). Nurses who work in behavioral health play important roles for MSM experiencing mental health challenges (Hughes & Mcdermott, 2020). Nurses who understand the difference in issues between MSM and MSW can positively impact these patients. Hartman et al. (2014) also noted that HCP are not adept at having conversations with MSM about post-operative sexual dysfunction and recovery. Mehta et al. (2019) found six related themes for patients, their partners, and together as couples, which were preoperative education on sexual side effects and realistic expectations of emotional preparation for sexual dysfunction postoperatively, effective communication strategies for couples to deal with sexual concerns, sexual intimacy without intercourse, and that partner needs were supported and addressed. The final theme that Mehta et al. (2019) identified specific to MSM was a desire their HCP had an improved understanding of how the identity of MSM is affected by surgery.

The 2016 *Restore Study* explored the sexual dysfunction affects among MSM who have had a prostatectomy, however, did not specifically address QOL as a component. Rosser and his team (2016) identified anatomical changes and challenges as the main theme from which two subthemes emerged: behavioral challenges, and changes across sexual response cycle. The 2016 *Restore Study* resulted in an understanding that penis characteristics, loss of ejaculate, erectile dysfunction, and urinary trouble were the categories that subjects expressed as the biggest change in loss of QOL. However, it is not known to what degree each variable affects MSM. Some MSM have experienced suicidal ideation after a prostatectomy resulting from the unanticipated sexual dysfunction and its associated affects, however the effects on QOL have not been

measured or studied in MSM (Susman, 2011).

Significance/Importance

Significance to Discipline

The MSM population is a disadvantaged group, and associated with widespread societal stigmas (Rosser et al, 2021). Healthcare concerns of MSM are marginalized and invisible to health care professionals (Obrey & Worsley, 2018), creating the need to identify if differences in racial disparities exist to fully understand the impact on QOL.

The increased burden of sexual dysfunction on the QOL in MSM is associated with emotional distress, loss of sexual identity, and feeling disqualified sexually (Ussher et al., 2017). Qualitative researchers have identified variables men have reported as the cause of burden, however an understanding of the severity of the burden from each variable is unknown and has not previously been measured in MSM (Danemalm Jägervall et al., 2019; McConkey & Holborn, 2018; Ross et al., 2022; Rosser et al., 2016; Ussher et al., 2017; Wassersug et al., 2017).

MSM often enter surgery uninformed by their HCP that the resulting outcomes will be serious QOL changes due to the unanticipated sexual dysfunction, because they were not given appropriate or complete information preoperatively (Rosser et al., 2016). The healthcare community has not been aware of these side effects from surgery and how disproportionately sexual dysfunction affects MSM, partly because many HCP do not know the sexual identity of their patients due to inappropriate sexual history intake (Rosser et al., 2021). Mehta et al. (2019) found 5 areas where provider-generated education failed to address the specialized needs among MSM, including pretreatment

discussions about sexual side effect teaching, promotion of sexual intimacy, and improved provider understanding of MSM and their sexual wellness and function. Health care practitioners rarely engage in open and meaningful discussion regarding needs specific to MSM due to personal beliefs, or lack of information/understanding (Rosser et al., 2016).

Theoretical Framework

I used the theory of the transactional theory of stress and coping by Lazarus and Folkman (1984) to guide my study.

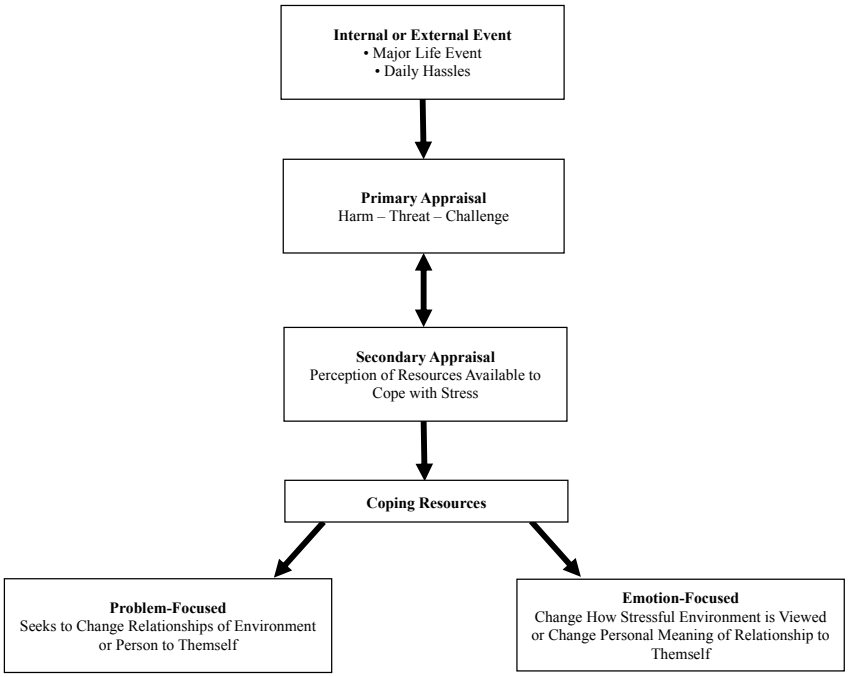
Stress can be caused by a major cataclysmic event, which affects an individual, a group and communities, such as the death of a loved one or a natural disaster (Lazarus & Folkman, 1984). Daily hassles are usually stressors that are typically repetitive, and may seem minimal; however, cumulative effects cause stress that builds (Lazarus & Folkman, 1984). How they appraise the situation can influence how they process stress, and the effects it has (Lazarus & Folkman, 1984).

This theory was designed to assess how major life events and daily hassles influence individuals coping abilities with stress. The event or hassle causes the individual to conduct a primary appraisal and assessing the level of harm, threat, or the challenge the situation presents (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) noted challenges can lead to positive stress, if the individual believes they possess abilities to overcome the challenge, whereas threats and harm are situations which cause negative stress. The coping response is either problem-focused, where the individual seeks to change their relationship with the person or environment which is causing the

stress, or emotion-focused, where the individual attempts to change either the personal meaning or how the stressful environment is viewed (Lazarus, 1993; Lazarus & Folkman, 1987).

Figure 1

Lazarus and Folkman's Stress and Coping Appraisal



According to Lazarus and Folkman (1984), coping refers to situations where people manage taxing demands both internally and externally, requiring some sort of coping mechanism to effectively process and deal with these demands. People manage these demands that can be compounded when their resources have been exhausted and exceed their abilities for resolve (Thomsen et al., 2010).

Effects on relationships for both patients and partners have not been explored. . I

used statistical data collection for identifying and measuring any effects stress may cause on QOL. Cognitive appraisal serves as a foundation for understanding the meaning of sexual dysfunction, and how well-being has been affected by threats or harms to their vulnerability in personal, social, and relationship concerns.

Original Contribution

Sexual dysfunction has a greater impact on MSM than MSW, however this population has not been studied quantitatively. The effects on QOL in MSM from sexual dysfunction, emotional and physical challenges, and intimacy challenges from a prostatectomy may threaten the ability for these men to fulfil their established sexual role (Obrey & Worsley, 2018). Understanding what specific challenges this population faces, and the degree their QOL is affected by the sexual dysfunction following a prostatectomy can help to provide educational and supportive resources to reduce the burden and improve QOL. My study will contribute to professional knowledge by measuring the impact on QOL of MSM from the effects of sexual dysfunction. Through understanding this population, private and public health practitioners can use the information to effect a change in clinical practice.

Purpose of Research

The purpose of this study was to determine if there is a difference in QOL in MSM with PCa who have had a prostatectomy and experience sexual dysfunction compared with MSM who have or had PCa and have not had a prostatectomy and experience sexual dysfunction.

Relevant Scholarship

Synthesis of Relevant Evidence

Zhu and Wittmann (2020) found that issues affecting QOL were feeling of loss, reluctancy in seeking help for sexual problems, grief, anxiety, cost of erectile aids, depression, and poor coping skills. The low self-esteem and a loss of masculinity from a prostatectomy have been shown to be predictors of poor outcomes which also affect sexual dysfunction, negatively impacting QOL and psychosocial functioning of men with PCa (McConkey & Holborn, 2018). Haggart et al. (2021) found 8 quantitative studies which addressed sexual dysfunction in MSM following prostate surgery but did not address the effect on QOL. QOL issues in MSM are impotence, climacturia, anejaculation, penile shrinkage, and decreased libido (Danemalm Jägervall et al., 2019; McConkey & Holborn, 2018; Ross et al., 2022; Rosser et al., 2016; Ussher et al., 2017; Wassersug et al., 2017). The degree to which each sexual dysfunction has affected the QOL in MSM has not previously been measured. The World Health Organization identified QOL as perceptions of the individual regarding their life, cultural values, goals, expectations, standards of living, and that QOL is measured from the person's perspective, however when expectations and goals fail, QOL is affected (Aburub et al., 2021).

Gap in Research

Research is needed to understand the importance level and degree of how PCA and a prostatectomy affect the QOL of MSM which may help change health care clinical practice and policy by improving patient education and allocation of resources, such as

community support groups, outreach programs, and networks.

Research Questions and Design

Research Question

My research question was, "What are the differences in QOL among MSM with PCa post-prostatectomy and experienced sexual dysfunction versus MSM with PCa post-prostatectomy and have not experienced sexual dysfunction?" The null hypothesis was, "There is no difference in QOL among MSM with PCa post-prostatectomy and experienced sexual dysfunction versus MSM with PCa who are not post-prostatectomy and have not experienced sexual dysfunction." The alternative hypothesis was, "There is a difference in QOL among MSM with PCa post-prostatectomy and experienced sexual dysfunction versus MSM with PCa who are not-prostatectomy and have not experienced sexual dysfunction."

Approach to Address Problem

I conducted a comparative analysis which is used to identify casual relationships between the dependent variables and the independent variables (Pickvance, 2020). Casual relationships are unable to be observed, making them a matter of inference (Pickvance, 2020). Two conditions to be met for comparative analysis is the data must be collected from two or more different groups, and an attempt to explain must be made, not simply to describe (Pickvance, 2020).

Methods

Participants

Target Population

The target population for this study was MSM who have had a diagnosis of PCa.. The information obtained through a demographic data survey (see Appendix B) provided information that was categorized and compared statistically.

Sample and Power

Sampling Strategies

I recruited participants through social media posting my flyer (see Appendix A) on two websites. Malecare.org is an advocacy organization with a website designed specifically for men with PCa, hosting the largest men's cancer support group in the U.S. (Capistrant et al., 2018). The site claims the current community consists of 77,492 members, with a subgroup community of MSM diagnosed with PCa at 1,217 members (Malecare, 2021). Another source for recruitment was Facebook, which has a specific group: Prostate Cancer and Gay Bisexual Men and stated they have a following of 320 members. Both social media sites have active members engaging in dialogue and shared experiences. Facebook and Malecare.org also provide a forum for men who are preparing for a prostatectomy, have recently had a prostatectomy, and those who had a prostatectomy and are seeking advice for advanced sexual and psychosocial issues from other members. I received permission to submit my survey on the Walden University Participant Pool to search for participants.

I used Survey Monkey to host the questionnaire process, allowing direct access to

results for entering into SPSS once the survey has closed. I requested permission from Malecare to allow the survey to be available to all their members via email and via the Malecare e-newsletter. I provided a brief synopsis of the study and qualifying criteria and members who were interested clicked on a link that took the participant to the website where a description and purpose of the study was identified, which included all rights and responsibilities of participation. The individuals saw the following screening questions:

Have you ever been diagnosed with prostate cancer?

Do you have sex with men?

If the individuals answered 'yes' to both qualifying questions, they were eligible to take the survey and were taken to the next screen. If the individual answered no to either of the screening questions, they were thanked for their interest in the study, and informed that they did not qualify for the survey and the screen closed.

Once eligibility was confirmed by answering 'yes' to these questions, the next screen advanced the individual to an informed consent. The participant was instructed to continue to the next screen if they agreed to the consent, which included the demographic questionnaire (see Appendix B). When the participant answered the demographic questions, the screen took them to the full SQoL-M. Once the survey was completed, the participant was thanked for their time. When the survey closed, the data was directly entered and analyzed using SPSS version 28.

A Priori Procedures

I used the online UCLA Advanced Research Computing (2023) G* power to

calculate the correct sample size for a *t*-test with 2 independent variables (IV) of sexual dysfunction in men who have experienced a prostatectomy and whose who have not, with one dependent variable, QOL. The effect size used was (f) of 0.25, an alpha of error probability of 0.05, a power of 0.8, and two groups would require a sample size of 128 (64 for each group).

Variables/Sources of Data

Relationships Between Variables

The IV were the two groups of individuals who have been diagnosed with PCa who were post-prostatectomy and experience sexual dysfunction and those with PCa, and had not had a prostatectomy and experienced sexual dysfunction. The DV was QOL.

Data Sources used to Operationalize Variables

I operationalized QOL by defining it as normal overall functioning with a feeling of overall satisfaction and value on their life (Liu et al., 2021), and used the Sexual Quality of Life Questionnaire – Male (SQoL-M) as an online survey. This survey is written for administration by paper, therefore I uploaded the SQoL-M to the web format as an exact duplicate of the paper survey version.

I conducted an independent *t*-test to compare the mean scores of QOL between MSM who have prostate cancer and have not had a prostatectomy and MSM who have/had prostate cancer and were post-prostatectomy. The *t*-test was appropriate because the DV is continuous, the IVs are categorical and independent groups, and there is independence of observations, as no participant can have and not had surgery at the same time (Laerd Statistics, 2018b). The mean of the DV between the two groups was

compared to the mean of the different IVs. I planned to use the ANOVA test to measure 3 groups of different races. The ANOVA test is appropriate because the DV is continuous, the 3 IVs are categorical and independent groups, and there is independence of observations, (Laerd Statistics, 2018b) as no participant can be in two races at the same time. I conducted data analysis using SPSS version 28.

Instrumentation or Measures

I chose the validated SQoL-M created by Pfizer Ltd, and owned by IQVA Instrument Services to measure QOL (see Appendix C). The SQoL-M is an 11-question survey which the participant scores each question on a six-point Likert scale. Each question asks the participants about their feelings of their sexual life.

Design and Analysis

Research Design

I used SPSS version 28 to analyze the data using the data using the independent *t* test to compare the means of two unrelated groups with the same continuous DV (Laerd Statistics, 2018b). I calculated a Cronbach's alpha on the SQoL-M (Laerd Statistics, 2018a). Cronbach's alpha provides an overall reliability coefficient in SPSS for the set of questions, which serves as an inter-rater reliability of the survey scale (Laerd Statistics, 2018a).

Central Analytical Strategies

According to Laerd Statistics (2018b) there are 6 assumptions required to meet to establish that a *t*- test was the correct parametric test to use (Laerd Statistics, 2018b). Cronbach's alpha was used as a measure of internal consistency because it is the most

common measure used for reliability with multiple Likert scale questionnaires (Laerd Statistics, 2018a).

Assumption #1 requires the DV to be measured in interval or ratio data. The survey uses a Likert scale to assess continuous QOL data ranging from 1-6. Ordinal data are measured by intervals in numerical form, however, do not specify the value between the intervals (Simon & Goes, 2013). The participants chose between, completely agree (1), moderately agree (2), slightly agree (3), slightly disagree (4), moderately disagree (5), and completely disagree (6). The results provided data on QOL between the two groups. Fulfilling assumption #2 requires 2 or more IV groups that are both categorical, and independent. My groups were independent as participants chose whether they had experienced a prostatectomy or not. Assumption #3 requires a study design with independence of observations.

Assumption #4 states significant outliers should not be present in the data points. If outliers were present in the data, I would have removed the outliers, and use SPSS to rerun the *t*-test to evaluate if the results were the same. If the results were the same, I would have reported the analysis of the full data, however, also report that the outliers were not influential. Assumption #5 states the DV should be distributed normally in each category measured against the IV.

I tested for normality using SPSS, by analyzing, using descriptive statistics, explore, plots, and normality plots with tests. Norman (2010) points out however, that according to the Central Limit Theorem, regardless of the original distribution, a sample size of greater than five or ten participants per group will have a mean that is mostly

distributed evenly. Assumption #6 identifies homogeneity of variances must be met. I used the Levene's test in SPSS to assume that all groups that were compared had the same variance with equal size groups to avoid a type II error. If the Levene's test failed, a Welch test will have been performed.

Justification for the *t*-test is found in the simplicity of measuring the mean of the results from a survey of two groups. I measured the mean of first group of MSM who had a prostatectomy and measured the MSM who have not. The common feature was that both groups were positive for a PCa diagnosis. Using only 2 groups to compare the means is best accomplished using the *t*-test (Laerd Statistics, 2018b).

Results

Execution

I recruited participants who met the criteria for my study to take a 5 – 7 minute online survey administered through Survey Monkey. I designed the study to utilize the SQoL-M survey developed by Pfizer and owned by IQVIA Instrument Services (see Appendix C). The 11-question survey was completed after two qualifying questions of, "Are you a man who haves sex with men," and, "Have you ever been diagnosed with prostate cancer (PCa)?" A third question was asked if the participant had their prostate removed surgically (prostatectomy). The individual was required to answer 'Yes' to the first two questions to qualify for the study. Once the participant positively answered the qualifying questions and acknowledged consent, the screen advanced to the demographic questions which contained 9 demographic questions, and 5 sexual dysfunction symptoms the participant identified if they experienced.

The study was designed around three sources for recruitment of participants. IRB (#04-28-23-0346016) approval was granted to utilize the Walden University student pool, Malecare.org, and Facebook's Gay and Bisexual Men's PCa group for recruitment. I contacted the administrator for the Facebook page via email and requested permission to post a flyer advertising the study with a link to the survey. After I received IRB permission, I posted the recruitment flyer in May 2023 (See Appendix A). The web administrator for Malecare.org who previously requested information about the study was emailed the proposal, however he did not respond to repeated emails requesting to post the flyer to their website. By August 2023, 54 participants had responded which would not generate enough surveys to meet the G*power to validate the study. I was granted permission by the IRB in August 2023 and September 2023 to post the study flyer on websites for SAGE, the National LGBT Cancer Network, and the Seattle Gay News. All three agencies posted the study flyer to their websites for 6 months. The study closed on November 15, 2023.

The numbers of those qualifying participants who began but did not complete the survey increased in September 2023. In October 2023, I discovered that a functional error had occurred with the survey, and that due to the 'logistics' function, it was not allowing participants to complete the survey section of the questionnaire. Once the issue was resolved, the postings were refreshed on the Facebook page, and the number of surveys from qualified candidates increased.

I had 217 surveys that were started. A total of 131 qualified surveys were completed, and 86 surveys were incomplete.

Results

I conducted an independent *t*-test using MSM as participants to assess if a difference existed in the QOL in MSM post-prostatectomy who experience sexual dysfunction, and MSM who have not had a prostatectomy, and have not experienced any of the sexual dysfunctions. I had two groups in which 67 participants had undergone a prostatectomy, and 64 participants had not undergone a prostatectomy (see Table 2).

Table 1

T Test

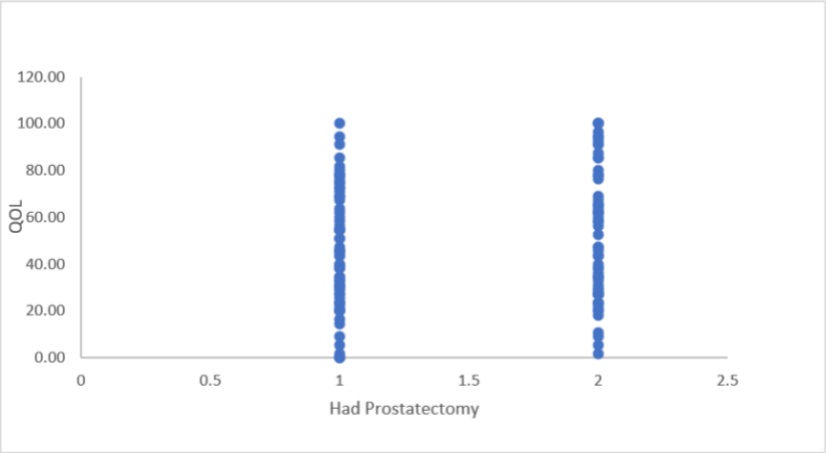
Group Statistics

	Had Prostatectomy	N	Mean	Std. Deviation	Std. Error Mean
QOL	Yes	67	45.4817	25.52821	3.11877
	No	64	51.6761	27.41149	3.42644

Assumptions #1 through #3 for *t*-test validation were met. The dependent variable (DV) of the QOL scores each participant provided was a continuous variable. The QOL scores were calculated in SPSS by inputting the equation provided by the authors, which gives each participant a score between zero and 100. The two independent variables (IV), a prostatectomy and marital status were categorical. The independent variable groups were independent, as no participant could be in both groups of having had surgery and not having surgery, or be in both the single and married/partnered groups. Assumption #4 was met, as no outliers were present in the distribution which was fairly even in the data points (see Figure 2).

Figure 2

Scatterplot of Mean QOL Scores



Note. 1 = had a prostatectomy, 2= did not have a prostatectomy

Assumption #5 requires that the DV is relatively distributed in a normal curve for comparing means for each group of the IV. The two groups had >50 members, therefore a one-sample Kolmogorov-Smirnov test was conducted to assess for distribution of the results (Mishra et al., 20219) (see Table 2). The assumption of normal distribution was met.

Table 2

Sample Kolmogorov-Smirnov Test

			Had Prostatectomy
N			131
Normal Parameters[a,b]	Mean		1.49
	Std. Deviation		.502
Most Extreme Differences	Absolute		.346
	Positive		.346
	Negative		-.335
Test Statistic			.346
Asymp. Sig. (2-tailed)[c]			<.001
Monte Carlo Sig. (2-tailed)[d]	Sig.		.000
	99% Confidence Interval	Lower Bound	.000
		Upper Bound	.000

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

Assumption #6 of homogeneity of variances was tested using Levene's test for equality of variance ($p = 0.339$), (see Table 3). I based the original plan on results from the literature that MSM who were post-prostatectomy had sexual dysfunctions from the surgery, and that men who did not have a prostatectomy did experience.

I analyzed the data using an independent samples *t*-test using SPSS version 28, to determine if there was a difference in QOL between MSM who have had a prostatectomy and those who have not had a prostatectomy. There was not a statistically significant difference *(p* = .183), therefore the null hypothesis was retained.

Table 3

Leven's Test for Equality of Variances

		Levene's Test for Equality of Variances		t-test for Equality of Means						
					Significance			Std.	95% Confidence Interval of the Difference	
		F	Sig.	t	One-Sided p	Two-Sided p	Mean Difference	Error Difference	Lower	Upper
QOL	Equal variances assumed	.921	.339	-1.34	.091	.183	-6.194	4.626	-15.34647	2.958
	Equal variances not assumed			-1.34	.092	.184	-6.194	4.633	-15.36268	2.974

Although there was no statistically significant difference between the two groups, the QOL scores do provide further information about the participants. The two responses that yielded the lowest QOL scores were feeling frustrated, and feeling they had lost something, which were reported by both groups (see Table 4). Both groups scored feeling of being anxious, depressed, and embarrassed about their diagnosis approximately the same (see Table 4). The question that had the highest QOL score which was also shared by both groups, was feeling guilty about their diagnosis see (see Table 4).

Table 4

QOL Scores by Rank

Had Surgery	Score	Rank	No Surgery	Score	Rank
Guilty	304	1	Guilty	331	1
Angry	256	2	Partner Rejected	276	2

Partner Rejected	239	3	Less of a Man	272	3
Less of a Man	236	4	Angry	268	4
Embarrassed	230	5	Embarrassed	246	5
Depressed	227	6	Depressed	220	6
Worry	226	7	Lost Conf as Sexual Partner	205	7
Anxious	222	8	Anxious	192	8
Lost Conf as Sexual Partner	188	9	Worry	176	9
Frustrated	068	10	Frustrated	175	10
Lost Something	117	11	Lost Something	162	11

Note. The 11 questions of the SQoL-M ranked from the highest QOL score (#1) to the lowest QOL score (#11) for both MSM who were post-prostatectomy and those who have not had a prostatectomy.

Discussion

Interpretation

The findings of my study differ from previous studies. Rosser et al. (2016) found that the sexual dysfunctions of climacturia, anejaculation, anatomical penile change in shape and size, and ED, to be resultant from a prostatectomy, while Greer and Bohnenkamp (2020) found that ED and penile changes are associated with PCa and other sexual dysfunctional diagnoses, and Palmer et al. (2020) found that erections are dependent on emotional, physiological, behavioral, and social factors. MSM who are post-prostatectomy most frequently identified sexual dysfunction associated with surgery (climacturia, anejaculation, anatomical penile change in shape and size) because they are resultant from alterations in the urinary and sexual function due to the removal of the prostate (Rosser et al., 2021). My results showed that men who been diagnosed with PCa, and had not had a prostatectomy reported that they had experienced climacturia and anejaculation, although clinical manifestations are associated with surgical alterations

(Rosser et al., 2021). No participants who had not had surgery reported an anatomical change in shape and/or size of their penis.

My results showed that the five sexual dysfunctions of climacturia, anejaculation, anatomical penile change in shape and size were reported in both groups. The causes of ED are multifactorial, however is also associated with age, as is loss of libido, and some men find erectile functioning as being core between being gay and older (Ussher et al., 2017).

Limitations

There were limitations to my study. The sample size was small and did not meet power analysis. Sample size was limited due to technical issues with distribution of the survey. Another limitation was the instrument. The SQoL-M questionnaire is a tool which has been validated through use in other studies, however the instrument has not previously been used in this population or addressed QOL in MSM who are post-prostatectomy. Most of the existing validated tools used to measure QOL and male sexual dysfunction for surveys focus primarily on erectile dysfunction, and no other QOL issues, therefore the SQoL-M survey was chosen for this study.

Implications

The implications for positive social change impact from my study are the collection of quantitative data that my study provided new information on the QOL among MSM who experience prostate cancer. The effects on QOL between MSM who were post-prostatectomy and MSM who were not, have not previously been studied quantitatively (Haggard et al., 2021). All 131 participants had prostate cancer, 67 were

post-prostatecctomy, and men in both groups experienced some sexual dysfunction. Therefore, health care professionals may choose to focus more time on patient education for postoperative care and rehabilitation rather than addressing sexual dysfunction disparities in QOL.

An additional implication for positive social change impact is the discovery that the SQoL-M questionnaire is not the most appropriate tool for assessing QOL in MSM post prostatectomy. The need for a new instrument to be developed which addresses sexual dysfunctions that most commonly affect MSM postoperatively from surgeries affecting sexual organs was identified. Understanding that the QOL may not be different between MSM who are post-prostatectomy and MSM who are not gives an opportunity to design an instrument around other areas that are affected by sexual dysfunction, rather than QOL. Empirical implications therefore are for health care professionals to continue focusing on physical recovery as well as challenges and barriers individuals experience, rather than how to improve their QOL (O'Hara et al., 2021).

Recommendations

A recommendation is the need to develop an appropriate instrument with the potential to accurately capture data on post-surgical MSM. An effective instrument tool would greatly assist in the understanding of the challenges and barriers this population experiences, and should be designed to include surgical procedures which affect the QOL from sexual dysfunctions resulting from surgery. I would also recommend repeating this study with a larger number of participants to ensure accurate assessments of the QOL in the MSM population.

I recommend a similar study be repeated with a focus on participants identifying how their QOL was affected by ranking the degree of severity each sexual dysfunction has affected them. This can help to identify areas needed in the community so that the most appropriate utilization of resources and education can be provided.

Conclusion

I conducted this study to identify if there was a difference in the QOL between MSM were post-prostatectomy and those who were not. The purpose of the study was to see if quantitatively, I was able to show that the current understanding of sexual dysfunction affecting MSM post-prostatectomy could be supported by filling in gaps in the limited literature that existed. The two groups indicated that their QOL was similar, as the overall differences in the mean score showed that there was no difference between the two groups. Although the results did not show the hypothesized difference, this information helps fill in the gaps in research by understanding that QOL may not broadly be an issue for MSM who undergo a prostatectomy. Recognition of MSM by healthcare professionals can reduce negative sexual orientation attitudes, and reduce discrimination, improving QOL and access to healthcare services (Değer & Kaçan, 2024).

Development of a new improved instrument to assess the effects of a prostatectomy in MSM, and a more aggressive marketing approach with attendance at events may be key in recruiting more participants for future study. These efforts may increase the potential for a larger participant pool, achieving statical power for validity. My study showed that there is no difference in QOL from sexual dysfunction between MSM who have had a prostatectomy and MSM who have not.

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Differences in QOL Between Single Men and Married/Partnered MSM Post Prostatectomy

Jéaux Alexander Rinedahl

Walden University

Outlet for Manuscript

The peer-reviewed journal I would like to publish my manuscript in is the *Journal of Oncology Nursing (CJON)*, an official peer-reviewed publication of the Oncology Nurses Society (ONS). The CJON uses standard American Psychological Association manuscript format, which is the format for this paper. This journal specializes in oncology nursing care, and this study involved addressing gaps in understanding how relationships relate to health, wellness, and nursing services.

Abstract

Prostate cancer (PCa) has the highest incidence of all cancers in men, affecting 107.5 per 100,000 men in the US. Treatment of PCa affects quality of life (QOL), most frequently affecting sexual, bladder, and bowel functioning. QOL among men who have sex with men (MSM) who have PCA has not been widely studied. The purpose of the study, guided by Lazarus and Folkman's transactional theory of stress and coping, was to understand if there were differences in terms of QOL among partnered and non-partnered MSM who have had prostatectomies. Data were collected from 131 participants using the Sexual Quality of Life – Male (SQoL-M) survey. Data were analyzed using an independent *t* test. No statistically significant differences in terms of QOL were found between partnered and non-partnered MSM who have had prostatectomies. All participants reported they experienced some type of sexual dysfunction. Recommendations for further research are to develop an instrument that is specific to this population, and conduct additional research with a larger sample size. Healthcare professionals need to be aware of how QOL is affected among MSM who have PCa so that care can be tailored to meet their needs, which will lead to positive social change.

Introduction

The Centers for Disease Control (CDC, 2023) reported in 2020, prostate cancer (PCa) had the highest incidence of all cancers in men, affecting 107.5 per 100,000 men in the and remains the second highest death rate in men due to cancer, at 18.9 deaths per 100,000 men in the US, only followed by lung cancer. In 2020, the incidence of new PCa cases reported worldwi de is 141,4000 with the strongest risk factors being hereditary and race (Gandaglia et al., 2021). Options for PCa treatment are depending on a variety of factors, including progression of the disease and any metastasis of the cancer. The most common non-cutaneous cancer in men worldwide is PCa, which is most commonly treated with surgery (Zortul et al., 2019).

The World Health Organization (WHO) defined the quality of life in 1998 as "the individuals' perceptions of their position in life, in the context of the cultural and value systems in which they live and in relation to their goals, expectations, standards and concerns" (Aburub et al., 2021). A literature search revealed that available studies are focused on men who have sex with women (MSW), with only a few qualitative studies discovered through literature searches on MSM. Current studies on how QOL is affected in men who have had a prostatectomy are focused on MSW, however, the information discovered from studies using MSW as participants do not translate to MSM relationships and need to be further studied independently (McConkey & Holborn, 2018). Recognition of MSM by healthcare professionals can reduce negative sexual orientation attitudes, and reduce discrimination, improving QOL and access to healthcare services (Değer & Kaçan, 2024).

The construct of gay men and bisexual men was used for identification and data collection, however the term men who have sex with men (MSM) was chosen as the most appropriate term. Many men engage in sex with other men but do not identify themselves as gay, bisexual, or homosexual, but rather as heterosexual (Persson et al., 2019). Therefore, the term MSM was chosen as the most appropriate. Key concepts of same-sex support, same-sex partners, and same-sex marriage are important confounding variables, as Hoyt et al. (2020) found being in a relationship made issues of disclosure and anticipated responses more difficult. In contrast, Danemalm Jägervall et al. (2019) found physical changes prompted relationship status changes due to perceptions of the physical change. Rosser et al. (2021) identified that being in a relationship offered greater support and improved outcomes, which identifies the need for further study on how relationships affect QOL.

A current literature search revealed no studies that have measured differences in QOL between single and partnered/married MSM. A quantitative approach has the potential to impact the nursing practice in areas of acute care, community health, mental health, oncology, urology, and primary care. Research is needed to quantify and understand the importance level of relationships, and how decisions men facing PCa options are affected by them. Relationships influence health care decisions, recovery time, outcomes, and rehabilitation outcomes (Capistrant et al., 2018). Mehta et al., (2019) found patients, their partners, and together as couples, wanted preoperative education on sexual side effects and realistic expectations of emotional preparation for sexual dysfunction postoperatively, effective communication strategies for couples to deal with

sexual concerns, sexual intimacy without intercourse, and that partner needs were supported and addressed by healthcare professionals.

The literature shows that single MSM feel they would never find a mate and have poorer mental and behavioral outcomes of isolation and a loss of the sense of belonging (Ussher et al., 2017). McConkey et al. (2018) also found that single men who were post-prostatectomy and experienced sexual dysfunction affecting their QOL feared they would remain forever single due to the outcomes of the surgery.

The knowledge a nurse provides is paramount when dialogue has been absent by healthcare providers (McConkey & Holborn, 2018). Nurses who work in mental health play important roles for MSM experiencing mental health challenges (Hughes & McDermott, 2020). Nurses who understand the difference in issues between MSM and MSW can positively impact these patients. Hartman et al. (2014) also noted that health care professionals are not adept at having conversations with MSM about post-operative sexual dysfunction and recovery. Rosser et al. (2016) found that health care practitioners rarely engage in open and meaningful discussion regarding needs specific to MSM due to personal beliefs, or lack of information/understanding.

Significance/Importance

The MSM population is a disadvantaged group, and associated with widespread societal stigmas (Rosser et al, 2021). Healthcare concerns of MSM are marginalized and invisible to health care professionals (Obrey & Worsley, 2018), creating the need to identify if differences in racial disparities exist to fully understand the impact on QOL. Mehta et al. (2019) identified factors that are different between single men and

partnered/married men and influence decision making and recovery. My study was designed to provide data to better understand the differences in QOL between MSM who are single versus in MSM who are in relationships which have not been adequately studied (Capistrant et al., 2018). MSM who are single versus MSM who are in relationships potentially have different needs for counseling, social networking, resources, and nursing care to address mental health and emotional stability, understanding the different support systems and coping mechanism structures needed to acquire a healthy return to function with limited QOL. Information discovered from studies using MSW in a relationship as participants do not translate to MSM relationships and need further independent study (McConkey & Holborn, 2018).

Theoretical Framework

I used the transactional theory of stress and coping developed by Lazarus and Folkman as a framework for my study. Lazarus and Folkman identified stress and coping mechanisms are triggered by either am internal or external major life event, or by daily hassles, or both. A major life event such as PCa is an internal event due to disease, however, an external event is when the patient is married or partnered. Grondhuis et al. (2019) found that the partners of men who have had PCa treatment do not receive support for sexual and emotional needs and are not usually included in medical consultations where sexual dysfunctions and negative outcomes are discussed. Carpenter et al. (2021) found that married MSM are more likely to have health care insurance than single men, which increases their access to health care.

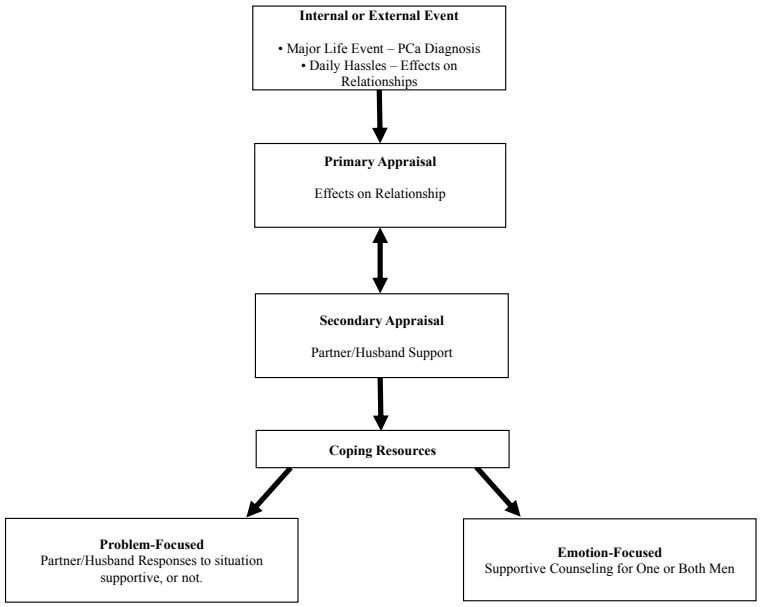
Although the internal event is the PCa diagnosis, the external event is how QOL

is affected by the participant's appraisal of their daily stress and coping mechanisms (Lazarus & Folkman, 1984). Stressors caused by daily hassles may be more debilitating than the actual external event itself (Ferrer et al., 2021) which may be influenced by whether the participant is married/partnered or not. I will determine if there is a difference in QOL between single MSM and married/partnered MSM who have had a prostatectomy.

Lazarus and Folkman (1984) established that stress occurs from perceptions of imbalance where demands exceed resources as a result of the subject's primary appraisal, shown in Figure 1. Lazarus and Folkman (1984) further established that the severity of the event, antecedes the secondary appraisal, which accounts for what resources might be available (see Figure 1).

Figure 1

Lazarus and Folkman's Stress and Coping Appraisal



In the secondary appraisal the participant assesses if support systems, partners, friends, are available for emotional support as well as transportation and assisting with personal needs, as the secondary appraisal may constantly change according to the fluctuations in the primary appraisal (Lazarus & Folkman, 1984).

Original Contribution

Sexual dysfunction has a greater impact on MSM than MSW, however this population has not been studied quantitatively (Rosser et al., 2016). The effects on QOL in MSM from sexual dysfunction, emotional and physical challenges, and intimacy challenges from a prostatectomy may threaten the ability for these men to fulfil their established sexual role (Obrey & Worsley, 2018). Understanding what specific challenges MSM SM who are single versus in MSM who are in relationships faces, and the degree their QOL is affected by the sexual dysfunction following a prostatectomy can help to provide educational and supportive resources to reduce the burden and improve QOL. MSM who are single versus in MSM who are in relationships have not been studied quantitively, therefore study I will address the gap in the literature and measure variables to further understand the frequency and occurrence of specific sexual side effects. My study contributes to professional knowledge by measuring the impact MSM from identified sexual dysfunction variables. Through understanding the MSM population, private and public health practitioners can use the information to effect a change in clinical practice.

Purpose of Research

The purpose of this study was to determine if there was a difference in QOL

between single MSM and married/partnered MSM who are post-prostatectomy.

Relevant Scholarship

Pandey et al. (2019) found that marriage had a positive effect on health, and that married men live longer than single men, experiencing better mental health along with greater satisfaction in overall QOL. A strong social relationship of a marriage provides improved health and emotional support overall (Pandey et al., 2019). The effects of relationships and marriage on QOL in post-prostatectomy MSM have not been studied.

The effects of an intimate relationship when learning of a PCa diagnosis, decisions regarding treatment options, and recovery, have only recently been studied. Danemalm Jägervall et al. (2019) found that perceived physical changes, primarily ED and anejaculation, had a lesser impact on QOL if the participant was in a relationship, than if the participant was not in a relationship. Partnered MSM have better outcomes and make different treatment decisions when undergoing a prostatectomy than single MSM do (Capistrant et al., 2018). Mehta et al. (2019) found MSM, and their partners wanted to be more informed about sexual side effects and realistic outcomes after a prostatectomy. Results also showed that communication to address MSM couples' sexual concerns, strategies for changes in intimacy beyond sexual practices, and attention to the partner's needs were important to sexual recovery. Obrey and Worsley (2018) found that challenges to intimacy occurred, and that surgery may compromise their sexual role in the relationship. Wassersug et al. (2017) found that partners have an important role in the sexual recovery, and Capistrant et al. (2018) found MSM relied on their partners for support and had better support systems overall. Mehta et al. (2019) identified factors that

are different between single men and partnered/married men, such as pretreatment preparation for sexual side effects, improved communication regarding sexual concerns within couples, promoting sexual intimacy, attentiveness to partners' needs. Decisions MSM made regarding healthcare choices and recovery were influenced by relationship status (Mehta et al., 2019). MSM who are single and MSM who are in relationships potentially have different needs for counseling, social networking, resources, and nursing care to address mental health and emotional stability, understanding the different support systems and coping mechanism structures needed to acquire a healthy return to function with limited QOL. Information discovered from studies using MSW in a relationship as participants do not translate to MSM relationships and need further independent study (McConkey & Holborn, 2018).

The gap in the research is measuring the degree of these explanatory variables have on the effects of QOL. Understanding the importance level and degree of effect can change health care clinical practice and policy by improving patient education and allocation of resources, such as community support groups, outreach programs, and networks. Therefore, my study was designed to provide data to better understand the differences in QOL between MSM who are single versus in MSM who are in relationships which has not been adequately studied (Capistrant et al., 2018).

Research Questions and Design

Research Question

My research question was, “What are the differences in QOL between single MSM and married/partnered MSM post- prostatectomy? The null hypothesis was, there is

no difference in QOL between single MSM and married/partnered MSM post-prostatectomy. The alternative hypothesis was, there is a difference in QOL between single MSM and married/partnered MSM post-prostatectomy.

Approach to Address Problem

The approach being used to address the research problem was a comparative analysis. Quantitative comparative analysis is used to identify casual relationships between the dependent variables and the independent variables (Pickvance, 2020). Casual relationships are unable to be observed, making them a matter of inference (Pickvance, 2020). Two conditions to be met for comparative analysis is the data must be collected from two or more different groups, and an attempt to explain must be made, not simply to describe (Pickvance, 2020).

Methods

Participants

Target Population

The target population was MSM who were post-prostatectomy. This population was studied to understand if there were differences in QOL among partnered/married post-prostatectomy MSM and post-prostatectomy MSM who are single.

Sample and Power

Sampling Strategies

I planned to recruit participants through social media posting on two websites. Malecare.org is an advocacy organization with a website designed specifically for men with PCa, hosting the largest men's cancer support group and in the U.S. (Capistrant et

al., 2018). The current community consists of 77,492 members, with a subgroup community of MSM diagnosed with PCa at 1,217 members (Malecare, 2021). Another source for recruitment was Facebook, which has a specific group: Prostate Cancer and Gay Bisexual Men, and state they have a following of 320 members. Both social media sites have active members engaging in dialogue and shared experiences. Facebook and Malecare.org also provide a forum for men who are preparing for a prostatectomy, have recently had a prostatectomy, and those who had a prostatectomy and are seeking advice for advanced sexual and psychosocial issues from other members. I also requested to submit my survey to the Walden University Participant Pool for posting to search for participants. I created a recruitment flyer to invite individuals to participate (See Appendix A).

I used Survey Monkey to host the questionnaire process, allowing direct access to results for entering in SPSS after the survey closes. I attempted to receive permission from Malecare to allow the survey to be available to all their members via email and via the Malecare e-newsletter. I provided a brief synopsis of the study and qualifying criteria and members who were interested further clicked on a link that took the participant to the website where a description and purpose of the study was further identified, including all rights and responsibilities of participation. The individuals answered screening questions which were : Have you had a prostatectomy? Do you have sex with men? If the individual answers ‘yes’, the screen will take them to the next question. If the individual answered no to either of the screening questions, they were thanked, and the screen closed. Once eligibility was confirmed by answering ‘yes’ to these questions, the next

screen advanced to the informed consent to electronically sign. Once informed consent was obtained, the screen advanced to the demographic questionnaire (see Appendix B). After demographic questions were complete, the screen advanced to the full survey. The participant was thanked for their time, and the screen shut off.

A Priori Procedures

To identify the correct sample size for the statistical power for the a priori measures, I used the online UCLA Advanced Research Computing (2023) G* power to calculate the correct sample size for a *t*-test with 2 independent variables (IV) of men who are single, and men who are married/partnered, with one dependent variable. The effect size was (f) of 0.25, an alpha of error probability of 0.05, a power of 0.8, and three groups yielded a sample size of 128 (64 for each group).

Variables/Sources of Data

Relationships Between Variables

The IV was relationship status, and the DV was QOL.

Data Sources to Operationalize Variables

I operationalized QOL by using the SQoL-M, leading to a burden that a married/partnered MSM and single MSM might experience differently. The DV was continuous, the IV is categorical, both groups are independent, and there were independence of observations, as no participant can be single and married/partnered at the same time. I compared the mean of the DV for each group.

Instrumentation or Measures

A review of validated questionnaires appropriate to seek authorization to use in

my study revealed six existing survey questionnaires. The questionnaire chosen that aligns most with my study is the validated SQoL-M created by Pfizer Ltd and owned by IQVIA Instrument Services (see Appendix C). The SQoL-M is an 11-question survey which the participant scored responses on a six-point Likert scale. Each question asked the participants about their feelings of their sexual life. The responses were analyzed according to the difference in participant responses between single and married/partnered MSM.

The SQOL-M was psychometrically validated as a sexual QOL instrument for men with premature ejaculation or erectile dysfunction (ED) (Abraham et al., 2008). The main outcome measures were assessed using internal consistency, convergent and discriminant validity, and known-groups validity of the instrument for test-retest reliability (Abraham et al., 2008). A factor analysis of a one-factor solution was confirmed, with excellent internal consistency, and test-retest reliability demonstrated (Abraham et al., 2008). A Cronbach's alpha of greater than or equal to 0.82 was achieved in all groups, and convergent validity was also good, as the intraclass correlation coefficient was 0.79 for men with ED (Abraham et al., 2008). The SQOL-M instrument is an effective survey tool for evaluating sexual QOL in men with sexual dysfunction, as the measure also demonstrated excellent discriminant validity between men with ED and men with no sexual dysfunction ($p < 0.01$) (Abraham et al., 2008).

The consistency of the SQOL-M has been validated through repeated use (Abraham et al., 2008). Assessing the impact changes from sexual dysfunction on the QOL in post-prostatectomy MSW are well documented using other established and

validated questionnaires, however, have not been applied to MSM in the same situation (Amarasekera et al., 2020).

Design and Analysis

Research Design

I used SPSS version 28 to analyze the data using the independent *t* test to compare the means of two unrelated groups with the same continuous DV (Laerd Statistics, 2018b). The measure of central tendency for use with an independent *t* test is the mean value, which compares the difference between two groups that are unrelated (Laerd Statistics, 2018b). The mean of the group of MSM who are married/partnered and MSM was compared to MSM who are single. Cronbach's alpha was be used as a measure of internal consistency for its reliable use with multiple Likert scale questionnaires (Laerd Statistics, 2018a). Cronbach's alpha provided an overall reliability coefficient in SPSS for the set of questions, which served as an inter-rater reliability of the survey scale (Laerd Statistics, 2018a).

Central Analytical Strategies

According to Laerd Statistics (2018b) there are 6 assumptions that I was required to meet to establish that a *t* test is the correct parametric test to use (Laerd Statistics, 2018b). Assumption #1 requires the DV to be measured in interval or ratio data. The survey uses a Likert scale to assess continuous QOL data ranging from 1-6. Ordinal data are measured by intervals in numerical form, however, do not specify the value between the intervals (Simon & Goes, 2013). The participants chose between, completely agree (1), moderately agree (2), slightly agree (3), slightly disagree (4), moderately disagree

(5), and completely disagree (6). The results provided interval data on QOL between the two groups. Fulfilling assumption #2 requires 2 or more IV groups that are both categorical, and independent. No one person can be both single, and married/partnered at the same time. Assumption #3 requires a study design with independence of observations. There is no occurrence of an observation which provides information about the occurrence of any other observations for this study. The survey was administered at a single point in time, and is not compared to any other measures. Assumption #4 states significant outliers should not be present in the data points. If outliers were present in the data, I would have removed the outliers, and used SPSS to rerun the *t* test to evaluate if the results are the same.

Assumption #5 states the DV should be distributed normally in each category measured against the IV. I will test for normality using SPSS, by analyzing, using descriptive statistics, explore, plots, and normality plots with tests. Norman (2010) pointed out however, that according to the Central Limit Theorem, regardless of the original distribution, a sample size of greater than five or ten participants per group will have a mean that is distributed evenly.

Assumption #6 identifies homogeneity of variances must be met. Using the Levene's test in SPSS assumed all groups that are compared will have the same variance with equal size groups to avoid a type II error. I conducted a Cronbach's alpha on the SQOL-M.

Research Design Justification

Justification for the *t* test is found in the simplicity of measuring the mean of the

results from a survey of two groups. I measured the QOL mean of first group of single MSM who had a prostatectomy and compared the results to second group of married/partnered MSM who had a prostatectomy to evaluate for differences. The common feature was that both groups were positive for a PCa diagnosis. Using only 2 groups to compare the means is best accomplished using the *t*-test (Laerd Statistics, 2018b).

Results

Execution

I recruited participants who met the criteria for my study to take a 5 – 7 minute online survey administered through Survey Monkey, using the SQoL-M survey. The 11-question survey was completed after two qualifying questions of, "Are you a man who haves sex with men," and, "Have you ever been diagnosed with prostate cancer (PCa)?" A third question was asked if the participant had their prostate removed surgically (prostatectomy). A participant was required to answer 'Yes' to the first two questions to qualify for the study. Once the participant positively answered the qualifying questions, they were taken to the next screen containing 9 demographic questions, and 5 sexual dysfunction symptoms the participant identified if they experienced.

I designed the study around three sources for recruitment of participants. IRB (#04-28-23-0346016) approval was granted to utilize the Walden University student pool, Malecare.org, and Facebook's Gay and Bisexual Men's PCa group for recruitment. I contacted the administrator for the Facebook page via email and requested permission to post a flyer advertising the study with a link to the survey. After I received IRB approval,

I posted the recruitment flyer was posted May 2023. I sent the web administrator for Malecare.org the proposal, however he did not respond to repeated emails requesting to post the flyer to their website. By August 2023, 54 participants had responded which would not generate enough surveys to meet the G*power to validate the study. Two additional submissions to the IRB were completed in August 2023 and September 2023, seeking permission to post the study flyer on website for SAGE, the National LGBT Cancer Network, and the Seattle Gay News. All three agencies posted the study flyer to their websites. The survey was posted for 6 months and closed on November 15, 2023.

I noted that the numbers of those qualifying participants who started but did not complete the survey increased in September 2023. In October 2023, I discovered that a functional error had occurred with the survey, and that due to the 'logistics' function, it was not allowing participants to complete the survey section of the questionnaire. Once the issue was discovered and resolved, the postings were refreshed on the Facebook page, and the number of surveys from qualified candidates increased.

Upon closure, I had 217 surveys that were started. A total of 131 qualified surveys were completed and accepted for analysis for this study, and 86 surveys were incomplete. I further split the into selected cases to create a data set on only those participants who had undergone a prostatectomy. Therefore, a total of 67 participants qualified for this study.

Results

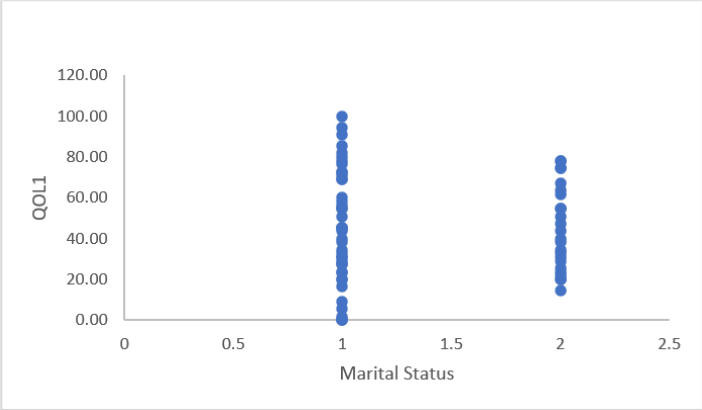
I conducted a *t*-test using MSM as participants who have or had PCa. I analyzed the data using an independent samples *t* test using SPSS version 28, to determine if there

was a difference in QOL between the single group, and the married/partnered group. I tested the assumptions for the independent *t*-test.

Assumptions #1 through #3 for *t* test validation were met. The dependent variable (DV) was a continuous variable of the QOL scores each participant provided, and the two independent variables (IV) of married/partnered and single were categorical. The dependent variable groups were independent, as no participant can be in both single and married/partnered groups. Assumption #4 was met, as no significant outliers were present in the data points.

Figure 2

Scatter Plot of Mean QOL Scores



Note. 1 = married/partnered, 2= single

Assumption #5 requires that the DV is relatively distributed in a normal curve for each group of the IV. This assumption was not met, as the groups were uneven between the married/partnered (64.2%) and single (35.8%) groups (see Table 3).

Table 1

Marital Status

Marital Status	*N*	%
Married/Partnered	43	64.2%
Single	24	35.8%

Because assumption 5 was not met, I ran a Mann-Whitney U test to determine if there were differences in QOL between married/partnered and single participants. The Mann-Whitney U test is a nonparametric alternative to the independent-samples *t*-test that can be used when data does not to meet the assumption that there are differences between two groups on a dependent variable that can be continuous or ordinal (Laerd Statistics, 2013).

Distributions of the QOL scores between married/partnered and single participants were similar, as assessed by visual inspection. The QOL score was not statistically significantly different between married/partnered and single participants, U = 506.5, z = -0.124, $p = 0.91$.

Table 2

Independent Samples Mann-Whitney U Test Summary

Statistic	Value
Total N	67
Mann-Whitney U	506.500
Wilcoxon W	806.500
Test Statistic	506.500

Standard Error	76.433
Standardized Test Statistic	-.124
Asymptotic Sig.(2-sided test)	.901

Assumption #6 of homogeneity of variances was tested using Levene's test for equality of variance ($p = 0.08$). The assumption was met.

The mean difference between the groups is slightly varied (married/partnered, 45.8, and single 45.0) however there was a wider dispersion of QOL scores in the married/partnered group noted in the standard deviations (married/partnered 28.2, and single, 20.5), (see Table 1). I created a scatter plot using which shows the dispersion of the QOL scores for the married/partnered MSM group have a wider distribution than single MSM (see Figure 2).

The results show that the mean QOL in both groups were separated by 0.75.

Table 3

Group Statistics

Marital Status	N	Mean	SD	SE Mean
Married/Partnered	43	45.7505	28.18651	4.29840
Single	24	45.0000	20.46706	4.17782

The married/partnered MSM (45.8 ± 28.1) had roughly the same QOL as single MSM (45 ± 20.5) (see Table 1). The results were not statistically significant with the

mean difference of 0.75 (95% CI -12.34 to 13.84), t(0.115) = 65, $p = 0.91$ (see Table 4). Therefore, the null hypothesis is retained.

Table 4

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
QOL	Equal variances assumed	3.13	.082	.115	65	.455	.909	.750	6.55	-12.34	13.84
	Equal variances not assumed			.125	60.40	.450	.901	.750	5.99	-11.24	12.74

Additional Analysis

Both married/partnered and single groups scored the first four questions in the same order. A feeling the participant lost something, felt frustrated, lost confidence in themselves as a sexual partner, and were anxious when they thought about their sexuality were respectively ranked in sequential order (see Table 5). Both groups collectively found feeling guilty about their PCA was not the least issue affecting their QOL.

Table 5

Ranking of SQOL-M Individual Questions by Group from Low to High QOL.

Married/Partnered	Score	Rank	Single	Score	Rank
Lost Something	2.2	1	Lost Something	1.98	1

Frustrated	2.68	2	Frustrated	2.48	2
Lost Conf as Sexual Partner	3.10	3	Lost Conf as Sexual Partner	2.78	3
Anxious	2.39	4	Anxious	2.88	4
Depressed	3.43	5	Worry	3.25	5
Embarrassed	3.69	6	Depressed	3.38	6
Partner Rejected	3.95	7*	Embarrassed	3.5	7
Worry	3.95	7*	Less of a Man	3.58	8
Less of a Man	4.01	8	Angry	3.7	9
Angry	4.13	9	Partner Rejected	3.9	10
Guilty	4.87	10	Guilty	4.8	11

Note. *Two categories scored the same mean.

Discussion

Interpretation

My findings differ from the literature which proposes that married/partnered MSM have a greater QOL than single MSM. Capistrant et al. (2018) found that married/partnered MSM had better outcomes and relied on their husband/partner for more social support. Single MSM also found ED more of a handicap than married/partnered men did, which affected their QOL (Capistrant et al., 2018). Rosser et al. (2016) found that men who were married/partnered had a greater sex life postoperatively because of the dedication between them as a couple. My results showed that QOL was fairly evenly distributed between the groups and that there was no difference in QOL between married/partnered MSM and single MSM.

Limitations

There were limitations to my study. The sample size was small and did not meet power analysis. Sample size was limited due to technical issues with distribution of the survey. Another limitation was the instrument. The SQoL-M questionnaire is a tool which has been validated through use in other studies, however the instrument has not

previously been used in this population or addressed QOL in MSM who have had a prostatectomy. Most of the existing validated tools used to measure QOL and male sexual dysfunction for surveys focus primarily on erectile dysfunction, and no other QOL issues, therefore the SQoL-M survey was chosen for this study. The limitations of the instrument were known.

Implications

The effects on QOL between married/partnered and single MSM have not previously been studied quantitatively (Haggart et al., 2021), however my results have provided new information on MSM relationships and QOL after a prostatectomy. Because the study showed no difference, it is likely that the QOL in these two groups may not be a significant issue after a prostatectomy, or the QOL is the same for all participants. Therefore, health care professionals may choose to focus more time on patient education for postoperative care and rehabilitation rather than addressing relationship disparities in QOL.

An additional implication for positive social change impact is the discovery that the SQoL-M questionnaire is not the most appropriate tool for assessing QOL in MSM post prostatectomy. The need for a new instrument to be developed which addresses sexual dysfunctions that most commonly affect MSM postoperatively from surgeries affecting sexual organs was identified. Understanding that the QOL may not be different between married/partnered and single MSM provides an opportunity to design an instrument around other areas that are affected by sexual dysfunction, rather than QOL. Empirical implications therefore are for health care professionals to continue focusing on

physical recovery as well as challenges and barriers individuals experience, rather than how to improve their QOL (O'Hara et al., 2021).

Recommendations

A major recommendation for future research is the need to develop an appropriate instrument with the potential to accurately capture data on post-surgical MSM. An effective instrument tool would greatly assist in the understanding of the challenges and barriers this population experiences, and should be designed to include surgical procedures which affect the QOL from sexual dysfunctions resulting from surgery.

I would recommend repeating this study with a larger variety of participants to ensure accurate assessments of the QOL in the married/partnered and single MSM population. I recommend a similar study be repeated with a focus on single participants to identify if this phenomenon is accurate or if QOL concerns exist but were not discovered using this instrument.

Conclusion

The literature showed that married/partnered MSM have a greater QOL, than single MSM (Capistrant et al., 2018, Obrey & Worsley, 2018), however my study showed no difference. In examining the QOL scores between the two groups, QOL was negatively impacted in all MSM who have had a prostatectomy.

The results of my study add to the body of knowledge by understanding that QOL may not broadly be an issue for MSM who undergo a prostatectomy, and that other areas should be assessed for focused education and support services. Development of a new improved instrument to assess the effects of a prostatectomy in MSM, and a more

aggressive marketing approach with attendance at events may be key in recruiting more participants for future study. These efforts may increase the potential for a larger participant pool, achieving statical power for validity.

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Summary

Integration of the Studies

The findings of my three studies showed that a prostatectomy influenced MSM, regardless of their race or marital status. Manuscript 2 showed that all men who have had a PCa diagnosis have experienced sexual dysfunction, however this has not affected their QOL. From these results I have discovered that while all three factors studied (race, sexual dysfunction, and marital status) had similar results, I found that QOL was not different in any of the groups compared after a prostatectomy. When the *t*-test did not show a difference between groups in manuscript 1, and manuscript 3, I ran a Mann-Whitney U test to assess if differences were present. The results that no differences existed between the groups was inconsistent with the literature, as previous studies found that a prostatectomy affected the QOL in all groups that I tested. The literature I studied included data that comes from interviews during qualitative study, which may be a factor in responses from participants that are discussed during an interview, and participants taking a survey where clarifying questions are not possible.

Theoretical Framework

The results of my study did not support Lazarus and Folkman's Theory of Stress and Coping and Appraisal, as the results did not show that stress was greater in any group. My study did not show a difference between an internal or external event affecting the participants primary appraisal of harm, threat, and challenge. The secondary appraisal, perception of resources available to cope with stress, and the coping resources of problem-focused or emotion-focused, were not measured by my study. It is unclear if

MSM seek to change environment or person to themselves after a prostatectomy or if they attempt to change how the environment is viewed; or change the meaning of the relationship of PCa and surgery to themselves.

Unanticipated Findings

My unanticipated findings across the studies are that I was unable to show that the QOL in MSM are changed from a prostatectomy. The research shows that the QOL has been affected postoperatively, which I believed would be my findings in all 3 studies. My results could have been affected because I was unable to receive enough responses to meet the a priori sample size and I had to collapse the ethnic groups into two from five because of low responses from non-white participants. The finding that the five sexual dysfunctions identified in qualitative research thought to be only an outcome of a prostatectomy (climacturia, change in shape and size of their penis, & anejaculation) yet were experienced by MSM with PCa and has not had surgery was unanticipated because these are symptoms of surgical alteration to the male urinary and sexual reproductive tract.

Implications

The implications for social change I identified were that QOL was similar in all the groups that I studied, however my sample size was not large enough to consider this an accurate outcome of my study. My results added important information about the QOL to the literature of this understudied groups of men. A second important implication is that there is a need for an instrument which can accurately provide information on QOL.

Future Research

I recommend repeating my study with a greater sample size, and with an instrument which can more accurately identify the QOL effects in MSM post-prostatectomy. If an appropriate instrument and larger sample size are used, the results the concerns of QOL can be readdressed quantitatively. It is possible that further qualitative research will confirm the findings that QOL is affected by a prostatectomy in MSM. I also recommend that the sexual dysfunctions I studied are readdressed through research to identify if the sexual dysfunctions which are thought to be a result of the anatomical changes from a prostatectomy (climacturia, change in shape and size of their penis, & anejaculation) do in fact exist in MSM who have PCa, but have not had surgery. I also suggest that a survey be designed in Spanish and French to capture the participants who are not English speaking. This may have increased my response rates, as the original Hispanic group had no qualified participants.

Conclusion

My final thoughts and takeaways are that regardless of my findings, MSM who have a prostatectomy do have their QOL affected, and some report having sexual dysfunctions which have a negative impact on their lives, as seen in the questionnaire responses. If I had a better instrument to use, and an option to attend large events to advertise my study, I would have had a greater response pool. It does not seem that a passive approach of recruitment works in the MSM post prostatectomy population. Cultural barriers exist with MSM who are of a minority race, as some cultures may have concerns regarding identifying their sexual orientation and/or that they have had cancer

and then surgery. I would recommend that a multicultural research team be available to speak with non-English participants regarding the intent and process of a survey, to increase the number of MSM willing to complete the questionnaire.

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Appendix A: Recruitment Flyer

The title of the study is:

The Quality of Life after a Prostatectomy in Men who Have Sex with Men

VOLUNTEERS NEEDED
PROSTATE CANCER STUDY

FOR A

You are invited to participate in a research study focused on the Quality of Life after a Prostatectomy in Men Who Have Sex with Men

- You are eligible if have been diagnosed with Prostate Cancer, and are a man who has sex with other men.
- This study involves taking an 11-question survey.
- Complete anonymity of your identity will be maintained
- This subject has been studied in men who have sex with women, however, it has not been studied in men who have sex with men.

The results of this study will be used to increase health care providers understanding of the special needs when working with men who have sex with men after a prostate cancer diagnosis.

IF YOU HAVE ANY QUESTIONS PLEASE CONTACT:

Jéaux Rinedahl
jeaux.rinedahl@waldenu.edu

Appendix B: Demographic Questionnaire

English

What is your age?	number

What is your marital status?

Single	Check
Married/Partnered	Check

Zip Code/Postal Code Number

What is your race?

Black	Check
Hispanic	Check
White	Check
When were you diagnosed with Prostate Cancer?	MM/YY
Have you had surgery to remove your Prostate?	**Y/N**
If you have had surgery, when was it?	MM/DD
Did you have any treatment for Prostate Cancer other than surgery?	Y/N

What is your highest level of education achieved?

Grade School	Check
Middle School	Check
High School	Check
Some College (did not graduate)	Check
Associate Degree	Check
Bachelor's Degree	Check
Master's Degree	Check
Doctoral Degree	Check

Have you experienced any of the following?

Inability or difficulty getting an erection (Erectile Dysfunction).	Check
Loss of sex drive/desire (Libido).	Check
A change in the size of your penis.	Check
Urinating when reaching an orgasm (Climacturia)	Check
Unable to ejaculate when reaching an orgasm (anejaculation).	Check

Appendix C: Authorization to use Sexual Quality of Life – Male Questionnaire

Thank you for your order through www.Pfizerpcoa.com web site.

Attached you will find the files you requested. Please be advised you now have permission to use the files per the agreed terms of use unless otherwise stated.

Please use the measure as it has been validated.

Please download PDF files using link.
https://www.pfizerpcoa.com/download/pdf/YToxOntpOjI1O2E6Mjp7aToxMzY2O3M6NDoiMTM2NiI7aToxMzY3O3M6NDoiMTM2NyI7fX0=

Order Details:

Responsibility for the PCOA instruments is currently transitioning to Cronos Clinical Consulting Services. If you have indicated 'Commercial research' as the Type of Use of any of the scales, you will receive invoicing and payment requests from Cronos COA in due course. License fees are listed at: www.pfizerpcoa.com/pricing. Please contact the mailbox at COA@cronosccs.com if you have any questions or need to amend your order.

ITEM LANGUAGE(S) TYPE OF USE TOTAL
Total Order: $0