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Psychosocial Predictors of Health-Related Quality of Life among Persons Living with Benign Prostatic Hyperplasia in Ibadan, Nigeria

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Abstract

Benign Prostatic Hyperplasia (BPH) is a chronic medical condition with severe consequences manifested in reduced Health-related quality of life (HRQoL). This study was designed to examine the psychosocial predictors (age, length of illness, family links, prostate knowledge, illness acceptance and social support) among persons with BPH in Ibadan, Nigeria. An expost-facto design was utilized among a total of 87 males (mean age 61.77±15.80 years) with BPH who presented at the study centre. Participants were purposively sampled. A self-report questionnaire comprising Socio-demographics, Knowledge (α=0.72); Illness Acceptance (α = 0.89; Social Support (α = 0.96); and HRQoL(α=0.47) scales was administered. Data were analysed using multiple regression at p<0.05 level of significance. Two hypotheses were tested. The result revealed that psychosocial factors significantly and jointly predicted HRQoL (Adj.R^2=0.22, $F_{(3;85)}$=4.05), accounting for 22.0% of its variance. Independently, illness acceptance (β=0.43) had significant contributions to HRQoL. However, age, length of illness and knowledge did not predict HRQoL. It was recommended that collaborative, multi and transdisciplinary approaches to research be engaged to explore possible interventions towards improving HRQoL of persons living with BPH.

Keywords: **Health-related quality of life, Illness Acceptance, Social Support and Benign prostatic hyperplasia.**

Introduction

Living with a chronic illness can be debilitating, distressing and may have significant impact in several areas of the individual's life, including their overall Quality of Life (QoL). The indicators of QoL for different persons may vary from culture to culture especially when it has to do with illness and diseases. According to Pinto et.al, (2016), QoL is a pointer to an individual's functioning in everyday life as well as how the individual's discernments of health status affects such individual's life. While QoL is mostly used across economic, health and other areas of discourse, Health-related quality of life (HRQoL) is usually used within the context of health, viz-a-viz the individual's perception of his life's quality despite the presence of a chronic illness. HRQoL is a wide-ranging idea which has been well-defined as the patient's personal interpretation of the effect of his illness and its handling on his physical functioning, social functioning, and daily functioning. This concept has been used repeatedly among researchers when considering the relationship between one chronic illness or the other (Krawczyk-Suszek, et al, 2022; Otache et al, 2022; Pinto et al., 2016).

Benign prostatic hyperplasia (BPH) is the proliferation of non-malignant cells inside the prostate gland, hence the name benign. The dimension of a normal prostate gland is between 10 to 40 grams. However, an enlarged prostate increase between 50-70 or more grams, such that it presses against the urethra and makes ejaculation and urination difficult. BPH is branded by the Lower Urinary Tract Symptoms (LUTS) that can either be obstructive or irritative (Roehrborn et al., 2009). In understanding BPH, it is important to understand the organ that is so affected. This organ is known as the prostate gland. It is a vital portion of the reproductive and excretory systems in every man. The prostate gland is responsible for semen production, and plays a significant role in urination among males. The prostate gets larger with age and comes with its unique challenges.

The obstructive symptoms of BPH include urinary retention which occurs when there is a remainder of urine in the bladder after voiding, causing a need to urinate more often. There is the "hesitancy" symptom, which is a lengthier than normal wait for the flow of urine to begin. Another obstructive symptom is incontinence, a LUTS where urine overflows from a full bladder uncontrollably even though normal urination cannot be started. This makes the individual go about with a stench of ammonia.

BPH carries a high public health burden because it imposes a decreased QoL and affects a growing proportion of men as they age (Karamchandani, 2014). Also, outcome of studies in the Western world show that BPH have a highest incidence and worse prognosis in black male (Du, Fang & Coker, 2006; Gannon, Glover, O'Neill & Emberton, 2005). In Nigeria, there is a high prevalence of BPH with 25.35% in Eastern Nigerian as reported in the outcome of a study (Ezeanyika, Ejike, Obidoa and Elom, 2006). However, there is no clear-cut prevalence rate for the illness in other parts of the country as most estimates are based on persons who presented themselves for diagnosis rather than a general survey. In de-emphasizing the biomedical factors already known to affect QoL among persons with BPH, it is in this light that this study sought to understand the psychosocial predictors that might predict HRQoL among persons with BPH. Such factors of interest in this study include level of knowledge about the disorder, psychological distress (perceived stigma, anxiety and depression) illness acceptance and perceived social support.

Prostate knowledge refers to the basic facts and information expected to be known by men about their prostate and related matters, especially as it affects their health. In Nigeria, despite increasing high incidence of BPH in the country, and the importance of early detection to reduce mortality, there is little literature on the knowledge and perception of adult men in the country about the malignancy and their awareness about screening tests for its early detection. According to Olapade-Olopa, Owoaje,Kola,Ladipo,Adebusoye, and Adedeji (2014), in a study that examined the role of the perception of Nigerian men of over 40 years as touching prostate cancer plus their knowledge level, they reported that most of the discussants were ignorant

of the existence of the prostate. It was more apparent in a group of the focus group discussion where none of the men knew about the gland. However, in the other three groups, they found out that a few men had knowledge of the prostate gland, and among these, some thought that diseases of the prostate were long-term snags of gonorrhoea and other infections of the urinary tract.

Illness acceptance is another factor identified to be associated with HRQoL. It is an individual factor, based on the decision of such individual to either accept the fact that the condition exists as well as the symptoms, or choose to live in denial of the existence of the condition. It is logical to say that those who opt for the latter become more susceptible to a reduced quality of life when compared to those who identified with the former. Either way, there is an implication for HRQoL, especially among persons living with BPH. Illness acceptance represents a negotiation between one's susceptibility and confrontation to a disease, hence being a criterion of effective handling with penalties of the latter and a significant cause of HRQoL (Jankowska-Polanska, Aleksandra, Katarzyna & Dariuz, 2017; Lewko, Politynska, & Kochanowicz, 2007)**.**

Social support is the acuity an individual has about the fact that he/she is actually being cared for and can readily get assistance from significant others when the need arises. Different support network exists. These could be tangible, emotional, informational, companionship and intangible. The idea of perceived social support is one that is conceived as a recipient's personal opinion or judgement that significant others or service providers have offered adequate and sufficient assistance in times of need (Gurung, 2006). Patients with BPH also need social support for improved QoL. This is important because, social support is a form of social capital that an individual who has one chronic illness or the other can draw from in critical situations (source).

The disorganization of the HRQoL of persons with BPH by the distressing symptoms they experience may significantly impact on treatment response. This disorganization can further have a substantial undesirable impact on all spheres of life, particularly their physical and mental QoL. This goes to affect their daily functioning, responsibilities to friends and loved ones and of course, increased perception of stigma due to the symptoms associated with the illness and being catheterized. The role of knowledge in HRQoL among persons with chronic illnesses has been one that posits a positive correlation. This implies that more information about one's state of health would bring about improved HRQoL. It is hypothesized that;

1. There will be a significant independent and joint prediction of prostate knowledge, illness acceptance and perceived social support on health-related quality of life
2. There will be significant independent and joint prediction of age, length of illness and family links on HRQoL

Methods

Design and sampling of participants

This study utilized the expost-facto design to examine the role of psychosocial factors (Prostate knowledge, illness acceptance, and perceived social support) in predicting the HRQoL of persons living with BPH. This study utilized the purposive sampling method as the means of selecting participants. Persons living with BPH who met the criteria set were approached through the medical personnel record.

Participants

The calculation of sample size for persons with BPH was determined using Yamane's (1967) sample size calculation formula for Epidemiological studies which generated 87 participants as the ideal representative of the population. Hence, the participants for the study were eighty-seven persons living with Benign prostatic hyperplasia at the surgery out-patient clinic, University College hospital, Ibadan. The Participants were all males with the youngest participant being and the oldest (x= 61.77±15.80 years).

Instruments

Relevant information were accessed from participants' hospital record-file. These information include their demographic data (gender, age, occupation, marital status, educational qualification and length of illness), and relevant medical information (Diagnosis, screening form, PSA level, co-existing illness or whether any member of the family has had BPH before).

HRQoL was measured using the Health-survey short-form twelve, which is a multi-use short form survey with 12 questions, all selected from the SF-36 health survey developed by Ware, Kosinski and Keller (1994). The SF12 has good internal consistency with Cronbach's alpha of 0.77 and 0.80 for the PCS and the M7CS, respectively (Luo et al., 2003). The scores on items range from 'Yes, limited a lot"=1 to "No, not limited at all"=3. A Cronbach's alpha coefficient of 0.51 was obtained by the researcher in this present study.

Level of illness knowledge was measured with the knowledge of Benign prostatic hyperplasia scale developed by Weinrinch (2004). Knowledge values were recorded to modify the values so that yes responses were coded as correct, and "no/don't know" responses were coded as incorrect. Item scores represented a total knowledge score between zero and 12. The authors reported a Cronbach alpha of 0.69 for this scale, while this researcher reported a Cronbach alpha of 0.71.

Social support was measured using the Perceived Multidimensional Social Support Scale by Zimet, et.al, (1988) is a twelve-item scale of the level at which a patient feel he is being well integrated and cared for by those close to him/her. The psychometric properties of the Multidimensional Scale of Perceived Social Support have been demonstrated in diverse samples (Canty-Mitchell & Zimet, 2000). In this study, it had a Cronbach's alpha of 0.95.

Procedure for data collection

A letter of introduction was obtained from the Head, Department of Psychology, Faculty of the Social Sciences, University of Ibadan to introduce the researcher to the authority of the Hospital in Ibadan and the research participants. Participants were enlisted from the Surgery out-patient unit of the Department of Surgery, UCH. They were reached through cell phone to determine their interest towards participating in the study. Informed consent was obtained from participants in the study. To guarantee anonymity, members' names were excluded on the surveys; ID was by telephone numbers (last three digits). Three trained research assistants helped in gathering information. Towards the end of this stage, every member got age proper incentives for their participation. The ethical board of the UI/UCH Research Committee approved the study in its entirety. The UI/UCH Ethics Committee assigned number: UI/EC/17/0426 was on each consent form received by the participants

Statistical analysis

The statistical tools employed in this study was the hierarchical multiple regression analysis using SPSS version 22. All p-values of <.05 were considered statistically significant.

Results

Table 1: Zero-Order (Bivariate) Correlation of Study Variables

Variables	1	2	3	4	Mean	SD
Prostate Knowledge	—				7.74	4.56
Illness Acceptance	.03	—			18.56	10.20
Social Support	.11	.07	—		70.39	17.03
HRQoL	.11	.22*	.26*	—	25.57	4.37

****. Correlation is significant at the 0.01 level (2-tailed)**

Correlation analysis was conducted to determine the relationship among all the variables of the study in (Table 1) above. This is preliminary and also necessary to determine whether or not multi-collinearity exist among the study variables. Results show that there was a significant positive relationship between illness acceptance and HRQoL (r= .22; P<.05) and, between perceived social support and HRQoL (r=.26; p<.05), meaning that the more an individual accepts the presence of this illness (BPH), the better the quality of life and, the more social support, the better the quality of life of persons with Benign prostatic hyperplasia. However, the result revealed no significant relationship between prostate knowledge and HRQoL (r= .11; P>.05).

Table 2: Summary of multiple regressions showing the independent and joint prediction of prostate knowledge, illness acceptance and social support on Health related quality of life

Predictors	β	t	p	R	R^2	ΔR^2	F	p
Prostate Knowledge	.02	.14	>.05					
Illness Acceptance	.52	1.48	>.05	.57	.33	.22	4.05	<.01
Social Support	.15	4.42	<.01					

The result in Table 2 shows the joint prediction of the psychosocial factors (prostrate knowledge, illness acceptance and social support)on HRQoL among persons living with BPH (R =.57; R^2 =.33; ΔR^2= .22; F (3, 84) = 4.05; p<.05). This implies that the psychosocial factors jointly accounted for 33% variance in the dependent variable. Furthermore, illness acceptance as a variable in this model is the only variable that had a significant independent influence on HRQoL (β = .52; t =4.42; p<.01), hence its contribution of 52% to the joint variance on health-related quality of life. This implies that respondents who refused to live in denial about the fact that they had BPH, had better quality of life. Other factors in the model did not independently predict HRQoL among persons living with BPH. Based on this result, the hypothesis was partly supported.

Table 3: Summary of multiple regressions showing the independent and joint prediction of age, length of illness and family links on Health related quality of life

Predictors	β	t	Sig	R	R^2	ΔR^2	F	p
Age	.06	.47	>.05					
Length of Illness	.07	.56	>.05	.10	.01	.01	.31	>.05
Family links	-.03	-.30	>.05					

The hypothesis that age, length of illness and family links will independently and jointly predict health-related quality of life was tested using multiple regression. The result above (table 3) showed that there is no significant joint prediction of the predictors on HRQoL (R =.10; R^2 =.01; ΔR^2= .01; F (3, 84) = .31; p>.05). Further, none of the demographic variables included in the model independently predicted HRQoL. The hypothesis was not supported and consequently rejected.

Discussion

The outcome from the first hypothesis looked at the joint and independent influences of the predictors on HRQoL. Findings revealed illness acceptance had significant independent influence on HRQoL among persons living with BPH. Further findings showed that psychosocial variables (knowledge, illness acceptance and social support) had a significant joint influence on HRQoL. This finding is line with the study outcome of Jankowska-polanska et al. (2017) in which they reported a significantly higher HRQoL for high-acceptance patients treated for an episode of atrial fibrillation. However, knowledge of BPH was not found to be a significant predictor of HRQoL in this study which is contrary to extant literature. For instance, Verma Tsai and Giaffer (2001) reported a significant positive correlation between Inflammatory Bowel Disease (IBD) related knowledge and HRQoL, while Saleem et al. (2012) reported a significant and positive association between hypertension related knowledge and HRQoL.

This study also revealed no significant independent and joint prediction of age, length of illness and family links on health related quality of life. The finding negates the report of Ribeiro, Vandenberghe, Prudente, Vila and Porto (2016) in which they found that mothers who are older have greater experience and are able to take up their life projects again and that experience, knowledge and support received are critical for adaptation. Furthermore, Cane and Wicks (2000) found that younger caregivers experience higher stress as they gained higher burden scores because they manage more commitments, such as career etc. more than the 65 year old caregivers. Result outcome from the fourth hypothesis showed that there was no age difference between the young and old persons living with BPH. This finding is in contrast to that of an Asian study by the Action study group (2017) among patients with lung cancer and lymphomas, which showed that age, co-morbidities, treatment, and several socioeconomic factors were associated with HRQoL and psychological distress.

Conclusion

This study found illness acceptance and social support are significant positive correlates of health-related quality of life. This implies that the more an individual accepts the presence of this illness (BPH), the better the quality of life and, the more social support received, the better the quality of life of persons with Benign prostatic hyperplasia. Other outcomes in this current study showed that some very significant factors predicted HRQoL among persons living with BPH. The joint prediction of psychosocial variables

(knowledge, illness acceptance and perceived social support) on HRQoL, in this study speaks volume. It points to the importance of the overall quality of life of persons living with BPH. These variables have also been alluded to in various studies among different population as predictors of diverse outcome variables. Also, it was concluded that illness acceptance was independently influenced by the HRQoL. Lastly, age, length of illness and family links did not independently and jointly predict HRQoL, while no significant difference among young and old persons living with BPH on HRQoL.

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