

## Research Article

# Association between Quality of Life and Lower Urinary Tract Symptoms in Patients with Benign Prostatic Hyperplasia in Tijuana, Mexico

Orduño-Cabrera LA\*, Ramonetti-Armenta MF, Salazar-Perfecto MA, Lopez-Hernandez JN, Sanchez-Sanchez SS and Delgado-Luna JE  
Department of Family Medicine, Family Medicine Unit #27, IMSS, Baja California, Mexico

\*Corresponding author: Orduño-Cabrera Luis Angel, Department of Family Medicine, Family Medicine Unit #27, IMSS, Baja California, Mexico

Received: January 20, 2022; Accepted: February 12, 2022; Published: February 19, 2022

## Abstract

**Background:** Benign prostatic hyperplasia (BPH) is one of the main urological pathologies that affects men in adulthood. The high frequency of the symptoms of this pathology is correlated with a perception of worsening of the quality of life, and can lead to deterioration in the activity and work productivity of the patient, leading to stress, depression and social isolation.

**Objective:** To know the association between quality of life and prostate symptoms in patients with benign prostatic hyperplasia in the family medicine unit #27 of Tijuana, Mexico.

**Methods:** Participants answered IPSS questionnaire to determine the severity of lower urinary tract symptoms and quality of life. Descriptive statistics were used, the qualitative variables were expressed in frequencies and percentages, and the quantitative variables in measures of central tendency and dispersion. The assumption of normality was made by the Kolmogorov-Smirnov test. The Chi-squared test was used to analyze differences in categorical variables, and the Odds ratio was used to calculate risk. The information obtained was analyzed in the statistical program SPSS version 25.

**Results:** A total of 356 patients were included in the study. In the evaluation of the severity of prostate symptoms, 59.27% presented mild symptoms (n=211). Regarding quality of life results, 76.69% (n=273) considered as good quality of life, finding an association between both variables ( $P < 0.001$ ).

**Conclusions:** We can conclude that there is an association between the severity of prostate symptoms and quality of life. It is important to constantly evaluate the presence of symptoms, in order to carry out preventive actions to avoid the effect on the quality of life of these patients.

**Keywords:** Quality of life; Lower urinary tract symptoms; Benign prostatic hyperplasia

## Introduction

Benign prostatic hyperplasia (BPH) is the progressive and permanent enlargement of the prostate gland that leads the presentation of irritative and obstructive symptoms of the lower urinary tract (LUTS) [1]. In Mexico, benign prostatic hyperplasia is the most common benign tumor in a 50-year-old man. It is the second cause of admission for surgical intervention and the first cause of consultation in the Urology department. The prevalence of BPH increases linearly with age. Approximately 61% of the population in Mexico reports LUTS. From 55 years of age, 25% suffer obstructive symptoms and at 75 years of age, 50% report a decrease in the strength and caliber of the urinary stream [2].

According to Instituto Mexicano del Seguro social (IMSS) data, in 2005, 63,874 consultations were granted nationwide for this reason; 1235 in the under-44 age group, 12393 in the 45 to 59 age group, and 60243 in the 60 and over age group. In 2016, 60084 new cases were diagnosed [3]. The pathophysiology of BPH is not fully understood. Histologically, there is glandular hyperplasia in the periurethral zone

and stromal in the transition zone, these changes are responsible for the symptoms and depend on the bioavailability of testosterone and dihydrotestosterone [4].

The symptoms originate from the obstruction of the lower urinary tract and are classified as: obstructive, weak urinary urination, abdominal effort, difficulty in initiating urination, intermittent urination, incomplete bladder evacuation and post-void drip; and irritative, frequency, nocturia, urgency urination, urinary urge incontinence, and dysuria [5]. The high frequency of presentation of these symptoms is correlated with a perception of worsening quality of life, and can lead to deterioration in the patient's work activity and productivity, in addition to leading to stress, depression and social isolation [6].

The goals of treatment for men with LUTS/BPH are to improve symptoms and quality of life, prevent clinical progression of the disease, and decrease the risk of complications and the need for surgery for the disease [7]. Knowing the level of quality of life makes it possible to elucidate the expected and unexpected effects of health

programs, allowing its index to be used to establish the magnitude of a possible change and the therapeutic interventions that are practiced [8]. In 1992 the World Health Organization (WHO) approved the International Prostate Symptom Index (American Urological Association Symptom Index, International Prostate Symptom Score, AUA-SI/IPSS), as a validated tool for clinical evaluation of patients with lower urinary tract symptoms, caused by obstructive prostatic enlargement [9]. The IPSS allows us to quantify the symptoms and know the relationship between symptoms and quality of life of each patient, guiding us and supporting us in making decisions about the behavior to be followed in patients with BPH [10]. The present study aims to know the association between quality of life and prostate symptoms in patients with benign prostatic hyperplasia in the family medicine unit #27 of Tijuana, Mexico.

## Material and Methods

### Study design and population

A comparative cross-sectional study was carried out in Tijuana, Mexico, between March 2020 and June 2021. The research was developed in the family medicine unit number 27 (UMF 27) of the Mexican Institute of Social Security (IMSS); primary care unit and main health care center in the region. Patients older than 50 years with a diagnosis of BPH who agreed to participate in the study by informed consent were included. Patients with a diagnosis of type 2 diabetes mellitus, prostatitis, urethral stricture, tract infection, neurogenic bladder, urethral or prostatic neoplasia, with use of diuretics and undergoing prostate surgery were excluded from the study. The patients were recruited in the family medicine department.

### Variables

The collection of variables was done with a standardized data form. The variables collected were the following: age, marital status and education, which were collected directly from the patients and their medical records. Predominant symptomatology, symptom severity and quality of life were evaluated using the IPSS questionnaire results, which was validated in 1992, has a Cronbach's alpha of 0.86 [11]. It consists of seven items related to lower urinary tract symptoms, and the eighth question measures the perceived impact of symptoms on quality of life. It is evaluated on a Likert-type scale with a score ranging from zero to five; the sum of these values allows classifying the result into mild symptoms (0-7 points), moderate (8-19 points) and severe (20-35 points). The eighth question explores the patient's quality of life and is assessed on their perception of how they would feel if they had to spend the rest of their life with prostate symptoms on a scale of zero to six points, ranging from delighted to fatal [12]. Scores of 4 or more points are related to a significant impact on quality of life. In case of obtaining a result with moderate symptoms (8-19 points) or severe (20-35 points) with quality impairment, the corresponding assessment by a family doctor was required.

### Statistical analysis

Descriptive statistics were used, the qualitative variables were expressed in frequencies and percentages, and the quantitative variables in measures of central tendency and dispersion. The assumption of normality was made by the Kolmogorov-Smirnov test. The Chi-squared test was used to analyze differences in categorical variables, and the Odds ratio was used to calculate risk. The information obtained was analyzed in the statistical program SPSS

version 25.

### Ethics

The study was approved by the Local Committee for Ethics and Health Research number 204, with registration number R-2021-204-028. The research was conducted under the General Health Law on Health Research, the Declaration of Helsinki and bioethical principles.

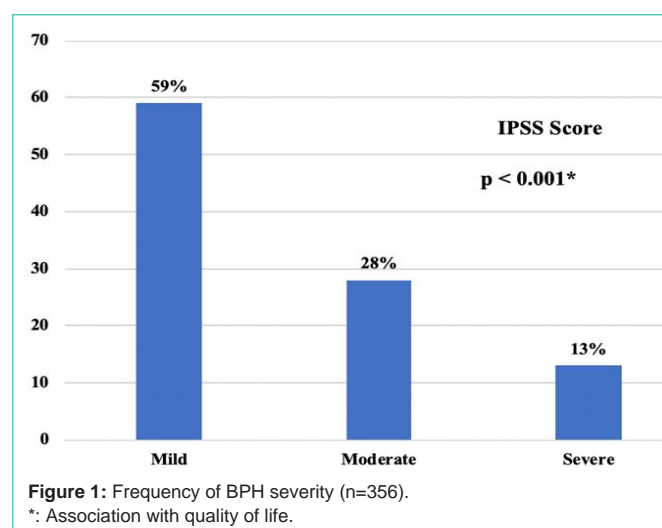
## Results

A total of 356 patients were included in the study, of which the mean age was  $69.85 \pm 10.2$  years. The most frequent age group was 60-69 years with 163 patients (34.5%). Of the total patients included in the study, 201 patients (56.1%) were married and their schooling was primary with 121 patients (33.8%). In the evaluation of the severity of prostate symptoms (Figure 1), through the application of the IPSS questionnaire, 59.2% (n=211) have mild symptoms, 28.3% (n=101) moderate symptoms and 12.3% (n=44) severe symptoms. Regarding the predominant symptomatology, 61.5% (n=219) presented obstructive symptoms and 38.4% (n=137) irritative. The complete characteristics are shown in Table 1.

Regarding quality-of-life results, according to the 8th question of the IPSS, 76.69% (n= 273) were considered good quality of life (Figure 2). In the bivariate analysis through the  $X^2$  Pearson test, the association between prostate symptoms and quality of life was confirmed, finding statistical significance ( $P < 0.001$ ) between the variables. To determine the symmetry between both variables, Kendall's Tau test was used, obtaining a value of 0.585 for the IPSS questionnaire, which indicates that the correlation of both variables is direct ( $p < 0.001$ ). To determine the directionality of the association between both variables, the Somers D test was used, obtaining a result of 0.643, which indicates that the level of prediction between both variables makes direct correlation ( $p < 0.001$ ).

## Discussion and Conclusion

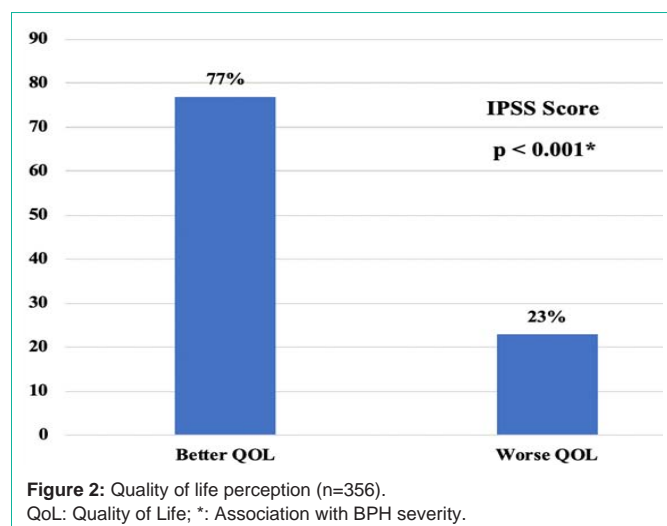
Sarmiento-García et al. [13] used a sample of 129 patients, they used the IPSS questionnaire to determine the severity of symptoms and quality of life. In this study the mean age was 61.1 years compared to our study where a mean age of 69.85 was obtained. Severe prostate



**Table 1:** Baseline characteristics of participants.

Characteristic (n=356)	n (%)	95% CI
<b>Age - years</b>	69.8 ± 10.2 <sup>a</sup>	--
<b>Marital Status</b>		
Single	27 (8)	5-10
Cohabitation	94 (26)	21-30
Married	201 (56)	50-61
Divorced	4 (2)	1-3
Widowed	30 (8)	5-10
<b>Education</b>		
No education	57 (16)	12-19
Elementary	121 (34)	29-38
Secondary	112 (32)	27-36
High School	41 (11)	7-14
Bachelor degree	25 (7)	4-9
Postgraduate	0 (0)	--

A: Mean (standard deviation); b: Frequency (percentage); n: Frequency; %: Percentage; 95% CI: Confidence Interval.



symptoms predominated with 53.5% and a poor quality of life in 54.3% of the patients, which differs from the results obtained in our study, where only 12.3% of the patient found severe symptoms, and 23.3% of our patients reported a poor quality of life. Cambbrero-Santos et al. [14], used IPSS to determine the prevalence of prostate symptoms, the most frequent symptomatology was irritative with 41%. Compared with our study in which the predominant symptomatology was obstructive.

Jalon-Monzon et al. [15], evaluated the impact of the lower urinary tract symptoms (LUTS) referred to in the IPSS questionnaire on quality of life and determined the relationship between quality of life and the total IPSS score, which found a higher percentage of moderate symptoms (75%) which differs from our studies in which the highest percentage of patients reported mild symptoms. Regarding quality of life, 88% of the patients reported a good quality of life, which is similar to what was found in our research.

Based on the results obtained in this investigation, we can

conclude that there is an association and correlation between prostate symptoms and quality of life, which presents symmetry and directionality, fulfilling the objective of the investigation. According to the data obtained in this study, it is observed that 28.3% and 12.3% presented moderate and severe symptoms, respectively, probably due to lack of medical control. Based on the above, it is important to evaluate in each of the medical consultations the presence of symptoms and their effect on quality of life through different validated tools such as the IPSS, which is explained in a simple and quick way.

## References

- García-Landaverde R, Silva-Palomares M, Villegas-Domínguez. Efecto de la tamsulosina en la calidad de vida de pacientes con hiperplasia prostática benigna. *Rev Sanid Milit Mex*. 2018; 72: 198-204.
- Diagnóstico y Tratamiento de los Síntomas del Tracto Urinario Inferior no neurogénicos asociados a crecimiento prostático. Guía de Evidencias y Recomendaciones: Guía de Práctica Clínica. México, Instituto Mexicano del Seguro Social. 2018.
- Diagnóstico y Tratamiento de la Hiperplasia Prostática Benigna México: Evidencia y recomendaciones; Catálogo maestro de Guías de Práctica Clínica. IMSS-176-09; 2009.
- Langan R. Benign Prostatic Hyperplasia. *Prim Care*. 2019; 46: 223-232.
- López-Ramos H, Medina-Rico M, Bastidas D. Tratamiento farmacológico de la hiperplasia prostática benigna. Revisión de la bibliografía. *Rev Mex Urol*. 2018; 78: 321-334.
- Carrero-López V, Cózar-Olmo J, Miñana-López B. Hiperplasia prostática benigna y síntomas del tracto urinario inferior. Revisión de las evidencias actuales. *Actas Urol Esp*. 2016; 40: 288-294.
- Brenes-Bermúdez F, Brotons-Muntó F, Castiñeiras Fernández J. Documento de consenso sobre pautas de actuación y seguimiento del varón con síntomas del tracto urinario inferior secundarios a hiperplasia prostática benigna. *Med Gen y Fam*. 2016; 5: 97-106.
- Robles-Espinoza A, Rubio-Jurado B, De la Rosa-Galván E. Generalidades y conceptos de calidad de vida en relación con los cuidados de salud. *El Residente*. 2016; 11: 120-125.
- Preciado-Estrella D, Kaplan SA, Iturriaga-Goyón E. Comparación del Índice Internacional de Síntomas Prostáticos versus Escala Visual Análoga Gea® para la evaluación de los síntomas de la vía urinaria inferior. *Rev Mex Urol*. 2017; 77: 372-382.
- Delgado-Quinones E, Pulido-Guerrero C, Navarro-Sandoval C. Prevalencia de síntomas prostáticos en pacientes mayores de 60 años en una unidad de medicina familiar. *Revista Médica MD*. 2015; 6: 264-267.
- Barry MJ, Fowler FJ Jr, O'Leary MP. The American Urological Association symptom index for benign prostatic hyperplasia. The Measurement Committee of the American Urological Association. *J Urol*. 1992; 148: 1549-1557.
- Blanco-Silvestre M, Barrios-Arnau L, Sánchez-Llopis A. Es el Visual Prostate Symptom Score (VPSS) tan útil como el International Prostate Symptom Score (IPSS) en la evaluación de los pacientes con síntomas de tracto urinario inferior? Una comparación prospectiva de los 2 cuestionarios. *Rev Mex Urol*. 2021; 81: 1-8.
- Sarmiento-García E, Serrano-Campos F, Reyes-Bello J. Relación entre calidad de vida y síntomas prostáticos en pacientes con hiperplasia prostática benigna. *UPAEP*. 2005.
- Alcaraz A, Carballido-Rodríguez J, Unda-Urzaiz M. Quality of life in patients with lower urinary tract symptoms associated with BPH: change over time in real-life practice according to treatment-the QUALIPROST study. *Int Urol Nephrol*. 2016; 48: 645-656.
- Jalón-Monzón A, Fernández-Gómez J, Rodríguez-Faba O. Relación entre síntomas del tracto urinario inferior y calidad de vida. *Arch Esp Urol*. 2015; 58: 109-113.