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Assessment of symptomatic Benign Prostatic Hyperplasia by Visual Prostate Symptom Score in illiterate or less educated patients and its comparison with International Prostate Symptom Score

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Abstract
Background
Benign prostatic hyperplasia is one of the many causes of lower urinary tract symptoms (LUTS). Most patients with low literacy find difficult to answer the International Prostate Symptom Score (IPSS) while assessing severity of LUTS. Visual Prostate Symptom Score (VPSS) represents the questionnaire in a pictorial format, enabling the old and illiterate patients to assess their urinary problems in a much easier way.
Aims and objective
Assessment of symptomatic BPH by VPSS in illiterate patients or patients with poor education and its comparison with IPSS.
Materials and methods
With Institutional Ethical Committee approval, this prospective study was conducted in Department of Surgery at Rajendra Institute of Medical Sciences, Ranchi (Jharkhand, India) from February 2019 to July 2020. A total 80 patients with LUTS due to BPH were enrolled. Patient's symptom severity was measured by IPSS and VPSS. Various parameters including age, education level, time taken to fill the IPSS and VPSS, requirement of assistant to fill the IPSS and VPSS, total scores of IPSS & VPSS, IPSS-QoL, VPSS-QoL, uroflowmetry parameters (Q_{max} & Q_{avg}) were noted and compared using chi-square test.
Result
In our study we found a statistically significant positive correlation between VPSS picture-1 (day time frequency) & IPSS question-2 (frequency); between VPSS picture-2 (night time frequency) & IPSS question-7 (nocturia); between VPSS picture-3 (force of urinary stream) & IPSS question-5 (weak stream); between IPSS total score & VPSS total score; between VPSS total score & VPSS-QoL and between IPSS-QoL & VPSS-QoL.
We also found a statistically significant negative correlation between VPSS total score & Q_{max}; between VPSS total score & Q_{avg} and between VPSS question-3 & Q_{max}.
Conclusion
VPSS can be a useful tool to evaluate the severity of symptoms in illiterate patients or patients with limited education presenting with LUTS due to BPH.
Key words- *Nocturia, Urgency, Uroflowmetry, weak stream*

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I. Introduction

Benign prostatic hyperplasia (BPH) is one of the most common disease of older man, making BPH a leading source of healthcare problem of old age in the world.[1] The prevalence of BPH increases with age. Longer a man lives, higher will be the chances of BPH, although not always symptomatic.[2] BPH is a histopathological diagnosis characterized by hyperplasia of the stromal cells and epithelial cells of periurethral area of the prostate.[3] BPH is one of the many causes of lower urinary tract symptoms (LUTS) in aging men. Besides hyperplasia some other factors which are responsible for BPH are: Androgens, estrogens, stromal-epithelial interactions, growth factors, neurotransmitters and genetic & familial factors.[4]

The capsule of prostate gland plays an important role in the development of LUTS.[5] The pressure of tissue proliferation and expansion is transmitted to the urethra by this prostatic capsule causing increases in urethral resistance. There is no precise correlation between the size of the prostate gland and severity of symptoms.[6]

The term "prostatism" is obsolete now, because it incorrectly indicate that the prostate gland is the one and only cause of LUTS in aging men. Paul Abrams coined the term "lower urinary tract symptoms" (LUTS) to replace the old and inappropriate term prostatism.[7]

LUTS is not specific for BPH, or bladder outlet obstruction. It describes the symptoms without attributing a cause.[8] It can be classified as[9]: Impairment of voiding (Hesitancy, Poor flow, Intermittent stream, Dribbling, Sensation of poor bladder emptying & Episodes of near retention) & Impairment of storage (Frequency, Nocturia, Urgency, Urge incontinence, Nocturnal incontinence).

LUTS secondary to BPH significantly affect the quality of life (QoL) of the patient.[10] The severity of LUTS in BPH can be estimated and documented by using symptom severity index. Several symptom severity indices have been designed to measure the urinary symptom caused by BPH.[11] These symptom indices are:

- Boyarsky Scoring System
- Madsen-Iversen Scoring System
- Danish Prostatic Symptom Score
- French BPH Specific Quality of Life Scale
- International Continence Society Male Questionnaire
- American Urological Association Symptom Index (AUASI)
- International Prostate Symptom Score (IPSS)
- Visual Prostate Symptom Score (VPSS)

Out of all these severity indices the International Prostate Symptom Score (IPSS) is the most commonly used for the quantification of BPH symptoms.[12]

The IPSS is a self administered questionnaire, which helps the clinician to screen, to rapidly diagnose, to assess the severity of symptoms and to suggest the management of the disease (BPH). It has total 8 questions out of which 7 are related to symptom and last question is about quality of life (QoL).[12] Each question of first seven questions patient have to choose one out of total 6 answers. These 6 answers indicate increasing severity of a particular symptom. The score of these 6 answers are 0 to 5. So the total score of IPSS ranges from 0 to 35 (asymptomatic to very symptomatic). The 8th question of quality of life is assigned a score of 0 to 6. The first seven questions of IPSS refer to the following urinary symptoms: Incomplete emptying, Frequency, Intermittency, Intermittency, Urgency, Weak Stream & Straining, Nocturia. Severity of symptom[13] according to IPSS are: Mildly symptomatic (score 0 to 7), Moderately symptomatic (score 8 to 19), severely symptomatic (score 20 to 35).

The IPSS is a useful and validated questionnaire to evaluate LUTS secondary to BPH.[14] So the IPSS is a very useful tool in day-to-day practice for evaluation and follow-up of patients with LUTS. But nothing in this world is ideal, and it have some disadvantages like:

1. Most patients with a low literacy find difficult to answer the IPSS questionnaire
2. Incidence of BPH increases more after 50 years of age.[15] And usually most individual of this age group, have eyesight related problems like difficulty in reading (of IPSS) and writing.

Due to these reasons, while answering IPSS questionnaire patients usually have to take assistance from the medical fraternity or from family member, which may lead to bias in patient's responses.

It has been established that a grade 6 reading level (American Educational Standards) is necessary to understand the IPSS questionnaire.[16] Thus, in developing country like India, and especially in the state with low literacy rate like Jharkhand, this problem become significant in magnitude rendering IPSS symptom score very difficult to comprehend and used by the patients of BPH.[17]

van der Walt et al reported that 24% - 87% of 96 men with LUTS (depending on their level of education) required assistance to complete the IPSS questionnaire.[18] But taking help from a physician, a nurse, or a family member to fill the IPSS questionnaire may cause miscommunication, may influence the response of patient for one or more question and introduce the risk of bias.

Visual Prostate Symptom Score (VPSS): Van der Walt et al noticed and avoid the aforementioned problems of IPSS. They developed an alternative questionnaire in the form of pictograms named "Visual Prostate Symptom Score (VPSS)". The VPSS pictogram represents the AUA questionnaire in a pictorial format rather than in text (as in IPSS), enabling the old and often illiterate patients to assess their urinary problems in a much easier and a reliable manner. A new question about the QoL i.e. "quality of life" (not present in AUA questionnaire) also added in the VPSS pictogram, which helps to better understand the symptoms and its effect on patient's day-to-day life.[19] The VPSS pictogram correlates significantly with the IPSS questionnaire with

regard to total score, the questions about the frequency, nocturia, force of the urinary stream, and overall quality of life (QoL).[20] It takes significantly less time to complete than the IPSS, especially in men with low literacy. So VPSS pictogram can be used instead of the IPSS questionnaire for the assessment of severity of symptom of BPH, who are illiterate or have low literacy.[21] The four questions of VPSS are in the form of picture which assesses: Daytime frequency (score range 1 to 6), Nocturia (score range 1 to 6)**,** Force of urinary stream (score range 1 to 5) and Quality of life (score range 0 to 6). Thus VPSS total score ranges from 3 to 23 (asymptomatic to severely symptomatic). Based on the VPSS total score patients were divided into three categories[13]**:** Mildly symptomatic: score <8**,** Moderately symptomatic: score 9 to 16**,** Severely symptomatic: score 17 to 23**.** VPSS is easy to understand and simple to use even for elderly patient with eyesight problem and less-educated patients.[22] Many studies have been conducted in countries with low literacy rate like Turkish, Indonesian and Namibia to assess usefulness of VPSS[23]. However, limited data are available about its usefulness and applicability in Indian population.[24]

Jharkhand (India), a state with low literacy rate[17] : According to Census 2011, national average effective literacy rate of male in India is 82.14 and effective literacy rate of male in Jharkhand is 78.45 (rank = 30). So the male effective literacy rate of Jharkhand is below the national average for males, rank 6th from bottom. The Rajendra Institute of Medical Sciences (RIMS), is a medical institute in Ranchi, the capital of Jharkhand. So VPSS may be more useful questionnaire to evaluate patients of BPH admitted in this institute.

Aims and Objectives

Comparison of visual prostate symptom score (VPSS) and International prostate symptom score (IPSS), and to know the usefulness of visual prostate symptom score (VPSS) in the assessment of symptom severity in patients of Benign Prostatic Hyperplasia, who are illiterate or have low literacy.

II. Materials and Methods

With Institutional Ethical Committee approval, this prospective study was conducted in the Department of General Surgery at Rajendra Institute of Medical Sciences, Ranchi (Ranchi, Jharkhand, India) from February 2020 to July 2021. Rajendra Institute of Medical Sciences, Ranchi is a tertiary level health care center with daily around 140 to 160 patients visit in OPD of Department of General Surgery. A total of 80 patients who presented with LUTS due to BPH were enrolled in the study. Written informed consent was obtained from all patients.

Inclusion criteria

Patients of age > 40 years having less education or illiterate with symptomatic BPH

Exclusion criteria

1. obstructive voiding symptom due to cause other than BPH like carcinoma prostate , stricture urethra
2. neurogenic bladder
3. patients of neuropsychiatric disorder
4. diabetic cystopathy
5. patients with a history of transurethral resection of the prostate
6. patients with voided volume <150 ml on uroflowmeter

Definition of literate & illiterate[17]

- **Literate:** a person aged seven and above, who can both read and write with understanding in any language.
- **Illiterate:** any person who do not fulfill criteria of being literate will be called as illiterate
- **Less educated :** any patient whose education is below 10th will be considered as less educated.[21]

Methods

A thorough clinical history was recorded from the enrolled cases and detailed general physical examination and systemic examination was carried out. Patient's educational status was noted. Digital rectal examination was done in every case to assess the size of the prostate, surface, consistency of the gland, and mucosa over the rectal wall. Serum prostate specific antigen assay and ultrasonography was carried out in all the cases to measure the prostrate size.

Before starting treatment (medical or surgical) patient's symptom severity was measured by using both IPSS and VPSS.

Various parameters including age, education level, time taken to fill the IPSS and VPSS, requirement of assistant to fill the IPSS and VPSS, total scores of IPSS & VPSS, IPSS QoL, VPSS QoL, uroflowmetry parameters (Q_{max} & Q_{avg}) were noted and compared using chi-square test.

Management of patients

The enrolled patients in this study were managed either by medical therapy or by surgical intervention (open simple prostatectomy).

- **Medical therapy-** all those cases who lack absolute indication for surgery were treated by medical therapy (α- adrenergic blocker, 5-α reductase inhibitor or both).
- **Surgical intervention** (open simple prostatectomy).

The surgically treated patients were followed up at 1 month and at 3 month after treatment for improvement of their symptoms using IPSS and VPSS. Medically treated patient were followed after 8 month of starting treatment for improvement of their symptoms using IPSS and VPSS.

Data collection and Analysis:

Data was collected by pretested semistructure questionnaire which will include all the necessary parameter pertaining to my Aims and Objective. Data entry will be done in MS Excel Software & analysis will be done on SPSS version-20 software. Parametric & nonparametric test will be applied wherever applicable depending upon the normality of data. Statistical analysis will be performed by Student's t-test (paired or unpaired, as appropriate) for parametric data, Spearman's rank test for correlations and Fisher's exact test for contingency tables. Observations with a P value < 0.05 were considered statistically significant.

Disclosure statement

No conflict of interest was declared by the authors.

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The authors declared that this study has received no financial support.

III. Observation

A total 80 patients of symptomatic BPH were enrolled in this study, out of which, 16 were taking medical treatment and the rest 64 underwent surgical treatment (open prostatectomy). The indication for surgery was purely on the basis of patient's symptom and objective data. Patient's age ranges from 50 years to 86 years with mean age 67.9 years.

Requirement of assistant to fill the IPSS and VPSS: Out of 28 illiterate patients no one were able to fill IPSS without assistant. In contrast to this, 4 illiterate patients were able to fill VPSS before treatment and 24 require assistant. At 1st follow up 13 patients and at 2nd follow up only 7 patients require assistant to fill VPSS. Out of 52 patients with poor education, while filling the IPSS, 36 patients before treatment, 28 at 1st follow up and 24 at 2nd follow up require assistant. But while filling VPSS 16 patients before treatment, 10 at 1st follow up and only 4 at 2nd follow up require assistant. Details are shown in chart- 1.

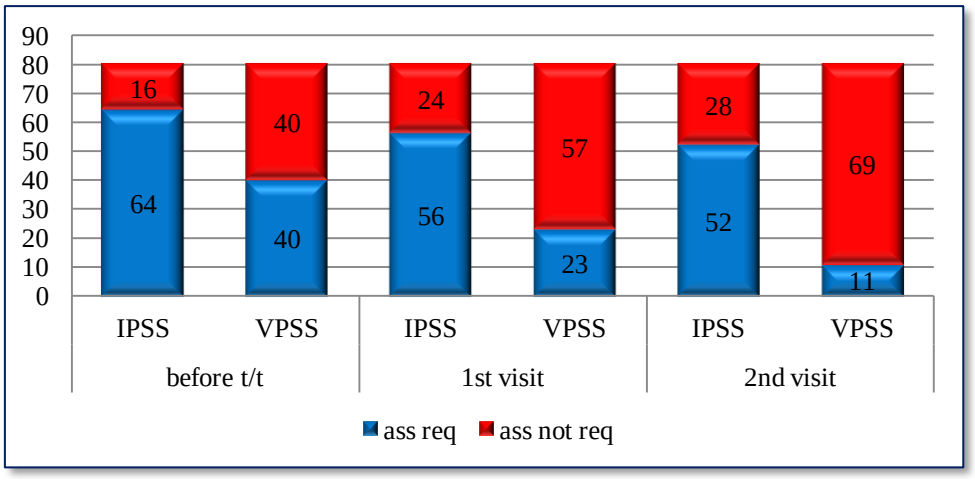

Chart-1, Assistant requirement (IPSS Vs VPSS)

Time taken to fill the IPSS and VPSS: Illiterate patients usually take more time to fill questionnaire than patients with poor education. At 1st visit (i.e. before treatment) the minimum time taken by illiterate patients to fill IPSS was 13 minute and maximum time was 18 minute. At 1st follow up and at 2nd follow up they took slightly less time to fill IPSS. Minimum time taken by illiterate patients to fill VPSS at 1st visit was 3 minute and maximum was 8 minute. Minimum time taken by patients with poor education to fill IPSS at 1st visit was 9

minute and maximum time was 18 minute. Minimum time taken by patients with poor education to fill VPSS at 1st visit was 2 minute and maximum time was 7 minute.

Correlation between VPSS picture-1 & IPSS question-2: VPSS picture-1 (day time frequency) and IPSS question-2 (frequency), assess the severity of symptom- "frequency of micturition". A statistically significant positive correlation found between VPSS picture-1 (day time frequency) and IPSS question-2 (frequency). r = 0.736882352**,** p- value = <0.0001

Correlation between VPSS picture-2 and IPSS question-7: VPSS picture-2 (night time frequency) and IPSS question-7 (nocturia), assess the severity of symptom- "frequency of micturition in night time". A statistically significant positive correlation found between VPSS picture-2 (night time frequency) and IPSS question-7 (nocturia). r = 0.833407534**,** p- value = <0.0001

Correlation between VPSS picture-3 and IPSS question-5: VPSS picture-3 (force of urinary stream) and IPSS question-5 (weak stream), assess the severity of symptom- "weak stream". A statistically significant positive correlation found between VPSS picture-3 (force of urinary stream) and IPSS question-5 (weak stream). r = 0.839402657, p- value = <0.0001

Correlation between IPSS total score and VPSS total score (At 1st visit): At 1st visit i.e. before treatment the minimum IPSS score recorded was 4 and the maximum score recorded was 30, the mean IPSS score was 18.4. The minimum VPSS score recorded was 5 and maximum score was 22, the mean VPSS score was 14.35. A statistically significant positive correlation was found between IPSS total score and VPSS total score as shown by chart-2. r = 0.937569036**,** p- value = <0.0001

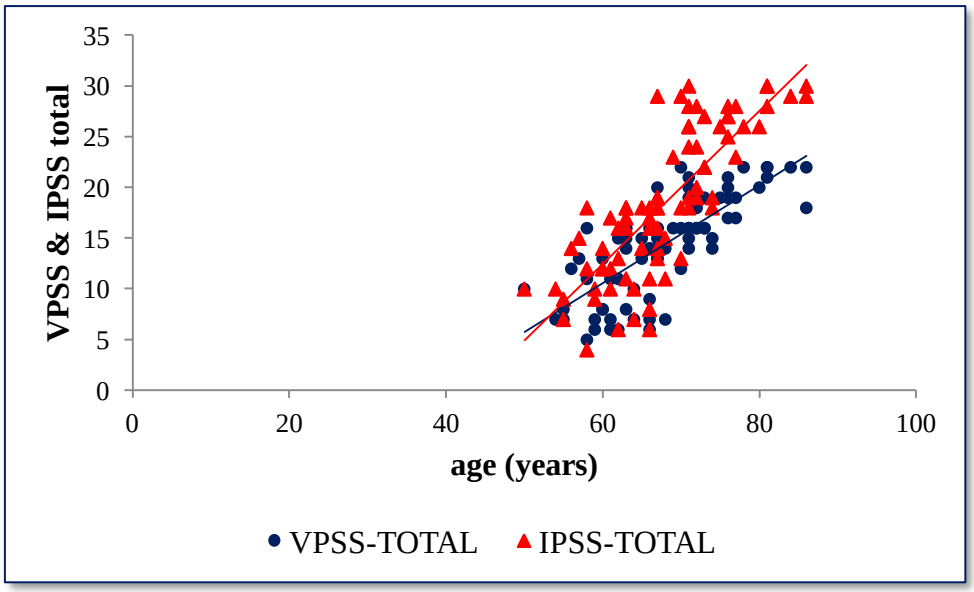

Chart- 2, Correlation between IPSS total score and VPSS total score

Correlation between VPSS total and VPSS QoL (at 1st visit): A statistically significant positive correlation found between VPSS total score and VPSS QoL, as shown in chart- 3. r = 0.928926481, p- value = <0.0001

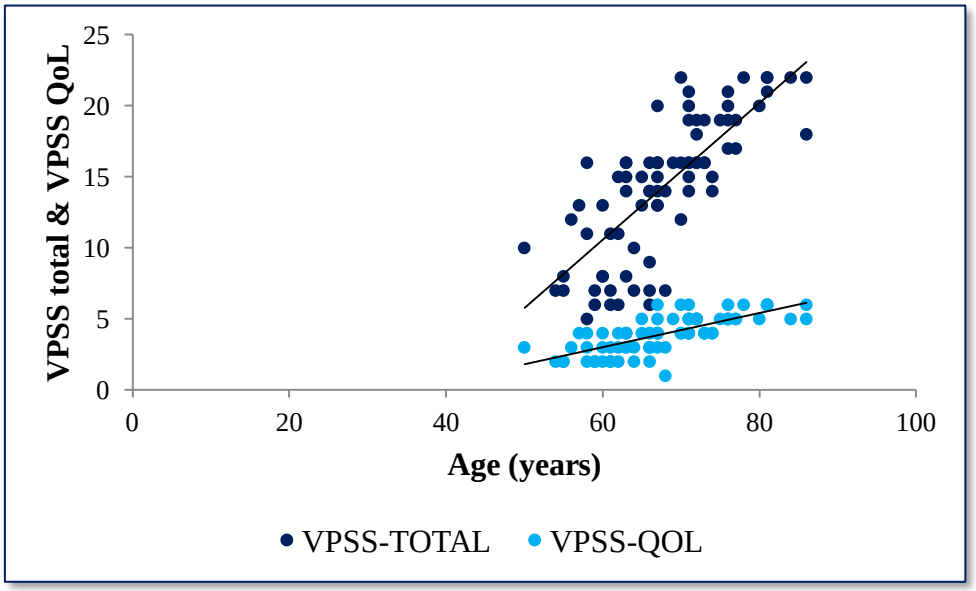

Chart- 3, Correlation between VPSS total and VPSS QoL

Correlation between IPSS QoL and VPSS QoL (at 1st visit): A statistically significant positive correlation found between IPSS QoL and VPSS QoL. r = 0.847765574**,** p- value = <0.0001.

Correlation between VPSS total and Q_{max} (at 1st visit): Before treatment, minimum Q_{max} recorded (i.e. at 1st visit) was 2.9 ml/sec and maximum Q_{max} recorded was 22.4 ml/sec. Mean Q_{max} was 11.02 ml/sec. A statistically significant negative correlation found between VPSS total score and Q_{max}. r = -0.778686417**,** p- value = <0.0001

Correlation between VPSS total and Q_{avg} (at 1st visit): Before treatment i.e. at 1st visit, mean Q_{avg} was 5.9 ml/sec. A statistically significant negative correlation found between VPSS total score and Q_{avg}. r = -0.781562118**,** p- value = <0.0001

Correlation between VPSS Q3 and Q_{max} (at 1st visit): A statistically significant negative correlation found between VPSS Q3 and Q_{max}. r = -0.877399599**,** p- value = <0.0001

Improvement in IPSS and VPSS score after treatment: Out of 80 enrolled patients in this study, 64 patients were treated surgically (open prostatectomy) and rest 16 medically. All the surgically treated patients were evaluated postoperatively by IPPS and VPSS questionnaire at 1 month (1st follow-up) and at 3 month (2nd follow-up) and medically treated patients at 8 month (1st follow-up). The mean IPSS score of surgically treated patients improved from 20.62 preoperatively to 8.8 after 1 month (1st follow-up) and to 4.75 at 3 month (2nd follow-up), and mean VPSS score improved from 16.22 preoperatively to 9.05 after 1 month (1st follow-up) and to 5.05 at 3 month (2nd follow-up). The mean IPSS score of medically treated patients improved from 9.5 to 6.25 and mean VPSS score improved from 6.87 to 4.37.

Improvement in urinary flow rate after treatment: All the surgically treated patients were evaluated postoperatively by measuring maximum and average urinary flow rate (Q_{max} and Q_{avg} respectively) at 1 month (1st follow-up) and at 3 month (2nd follow-up) and medically treated patients at 8 month (1st follow-up). The mean Q_{max} of surgically treated patients improved from 9.29 preoperatively to 16.45 after 1 month (1st follow-up) and to 18.21 at 3 month (2nd follow-up). The mean Q_{avg} increases from 5.01 preoperatively to 7.65 after 1 month (1st follow-up) and to 8.89 at 3 month (2nd follow-up). The mean Q_{max} of medically treated patients increases from 17.92 to 18.83. The mean Q_{avg} before treatment was 9.93 and after 8 month of starting treatment were 9.56.

Correlation between various parameters in this study

Parameters (before treatment i.e. at 1st visit)	**r (correlation coefficient)**	**p-value**
IPSS total Vs VPSS total	0.937569036	<0.0001
IPSS total Vs IPSS QoL	0.920460299	<0.0001
VPSS total Vs VPSS QoL	0.928926481	<0.0001
IPSS QoL Vs VPSS QoL	0.847765574	<0.0001
VPSS Q1 Vs IPPS Q2 (frequency)	0.736882352	<0.0001
VPSS Q2 Vs IPPS Q7 (nocturia)	0.833407534	<0.0001
VPSS Q3 Vs IPPS Q5 (weak stream)	0.839402657	<0.0001

IPSS total Vs Q_{max}	-0.808011395	<0.0001
IPSS total Vs Q_{avg}	-0.809934986	<0.0001
VPSS total Vs Q_{max}	-0.778686417	<0.0001
VPSS total Vs Q_{avg}	-0.781562118	<0.0001
IPPS Q5 Vs Q_{max}	-0.877399599	<0.0001
VPSS Q3 Vs Q_{max}	-0.877399599	<0.0001

IV. Discussion

BPH is one of the several causes of lower urinary tract symptom (LUTS) in aging man. LUTS describe the symptom without attributing a cause. Severity of symptom of BPH does not correlate well with prostate size, but is strongly related to overall health status. Hence BPH symptom should be assessed before treatment & their improvement following treatment. Over the time several symptom indices have been designed to measure the urinary symptom caused by BPH.

Out of all the symptom severity indices "American urological association symptom index (AUASI)" is the most comprehensive description of design and validation of symptom index for BPH. It includes total seven questions covering frequency, nocturia, weak urinary stream, hesitancy, intermittency, incomplete emptying and urgency. Assessing and managing BPH involves not only an evaluation of the symptom and their severity, but also determining the impact of the disease on a patient's quality of life and sexual function. But AUASI lacks the question about quality of life (QoL). So an additional question added in AUASI which refers to the patient's perceived "Quality of life (QoL)"; after this it has been adopted by the World Health Organization as the "International Prostate Symptom Score (IPSS)".

The IPSS is of eight questions (7 symptom questions and 1 quality of life question) written screening tool used to screen for, rapidly diagnose of, track the symptom of and suggest management of the symptoms of BPH. It is the most commonly used scoring system for the quantification of benign prostatic hyperplasia symptoms. The IPSS is a useful and validated questionnaire to evaluate LUTS secondary to BPH. But most patients with a low literacy find difficult to answer the IPSS questionnaire.

While answering IPSS questionnaire patients usually have to take assistance from the medical fraternity, which may lead to bias in patient's responses. Thus, in country like India, and especially in the state with low literacy rate like Jharkhand, this problem is more in magnitude rendering this symptom score very difficult to comprehend and used by the people.

Van der Walt et al avoid the aforementioned problems of IPSS, by developing an alternative questionnaire in the form of pictograms named "Visual Prostate Symptom Score (VPSS)." The VPSS differs from the IPSS in presenting the AUA questionnaire in a pictorial format enabling the old and often illiterate men to assess their urinary problems in a much easier and a reliable manner. Moreover, a new concept of QoL added in the VPSS helps to better understand the symptoms and its effect on patient's day-to-day life.

The VPSS correlates significantly with the IPSS with regard to total score, the questions about the force of the urinary stream, and overall QoL. It takes significantly less time to complete than the IPSS, especially in men with limited schooling. So VPSS can be used instead of the IPSS for the assessment of symptom severity in men with LUTS due to BPH, who are illiterate or have low literacy.

There are many advantages in using the VPSS. It is easy to understand and simple to use even for elderly and less-educated persons. Various studies have been conducted in Turkish, Indonesian and Namibia to assess usefulness of VPSS. However, limited data are available about its usefulness and applicability in Indian population.

The aims and objective of this prospective study is assessment of symptomatic BPH by Visual prostate symptom score in illiterate patients or patients with poor education. A total 80 patients of symptomatic BPH were enrolled in this study.

Out of 28 illiterate patients no one were able to fill IPSS without assistant and all require an assistant to fill IPSS before treatment, at 1st follow up and at 2nd follow up. In contrast to this, 4 illiterate patients were able to fill VPSS before treatment and 24 require assistant. At 1st follow up 13 patients and at 2nd follow up only 7 patients require assistant to fill VPSS.

Out of 52 patients with poor education, while filling the IPSS, 36 patients before treatment, 28 at 1st follow up and 24 at 2nd follow up require assistant. But while filling VPSS 16 patients before treatment, 10 at 1st follow up and only 4 at 2nd follow up require assistant

Illiterate patients usually take more time to fill questionnaire than patients with poor education. At 1st visit (i.e. before treatment) the minimum time taken by illiterate patients to fill IPSS was 13 minute and maximum time was 18 minute. At 1st follow up and at 2nd follow up they took slightly less time to fill IPSS. Minimum time taken by illiterate patients to fill VPSS at 1st visit was 3 minute and maximum was 8 minute.

Minimum time taken by patients with poor education to fill IPSS at 1st visit was 9 minute and maximum time was 18 minute. Minimum time taken by patients with poor education to fill VPSS at 1st visit was 2 minute and maximum time was 7.

In our study we found a statistically significant positive correlation between
VPSS picture-1 (day time frequency) and IPSS question-2 (frequency).
VPSS picture-2 (night time frequency) and IPSS question-7 (nocturia).
VPSS picture-3 (force of urinary stream) and IPSS question-5 (weak stream).
between IPSS total score and VPSS total score.
IPSS total score and IPSS-QoL.
VPSS total and VPSS QoL.
IPSS QoL and VPSS QoL.

A statistically significant negative correlation found between
IPSS total score and $Q_{max.}$
IPSS total score and $Q_{avg.}$
VPSS total score and $Q_{max.}$
VPSS total score and $Q_{avg.}$
IPSS Q5 and Q_{max}.
VPSS Q3 and $Q_{max.}$

V. Summary

Total 80 patients were enrolled for this study. All patients were divided into two groups; illiterate patients or patients with poor education. 28 (35%) patients were illiterate and remaining 52 (65%) patients were of poor education.

A greater proportion of patients could complete the VPSS questionnaire without assistant compared with IPSS questionnaire.

Out of 28 illiterate patients, VPSS pictogram was completed by 4 (14.3%) patients without assistant, whereas no patients were able to complete the IPSS questionnaire without assistant.

Out of 52 poorly educated patients, the VPSS pictogram was completed without assistant by 36 (69.2%) patients, whereas only 16 (30.8%) patients could complete the IPSS questionnaire without assistant. The difference was found to be statistically significant ($p < 0.0001$).

There was a significant difference in time taken by the patients to fill the IPSS versus IPSS questionnaire and the difference was found to be statistically significant ($p < 0.0001$).

Conclusion

In country with low literacy rate like India, assessment of severity of symptom of benign prostatic hyperplasia by International prostate symptom is difficult because of difficulty in understanding the IPSS questionnaire. Patients usually require an assistant in form of family member, nurse or doctor which may lead to bias in symptom's score. Older patient with poor vision find difficulty in reading the questionnaire even if they are literate.

Van der Walt developed an alternative questionnaire in the form of pictograms named "Visual Prostate Symptom Score (VPSS)." The VPSS pictogram represents the AUA questionnaire in a pictorial format enabling the old and often illiterate patients to assess their urinary problems in a much easier and a reliable manner.

In the present study, a significant correlation found between VPSS and IPSS with regard to total score, QoL score, score for day frequency, score for nocturia and score for weak stream. VPSS can be completed by a significant number of illiterate patients or patients with poor education without the help of any assistant like family member, nurse or doctor. Moreover, the patients take shorter time to complete the VPSS pictogram than IPSS questionnaire. The VPSS pictogram can be a useful tool to evaluate the severity of symptoms in illiterate patients or patients with limited education presenting with lower urinary tract symptoms due to BPH.

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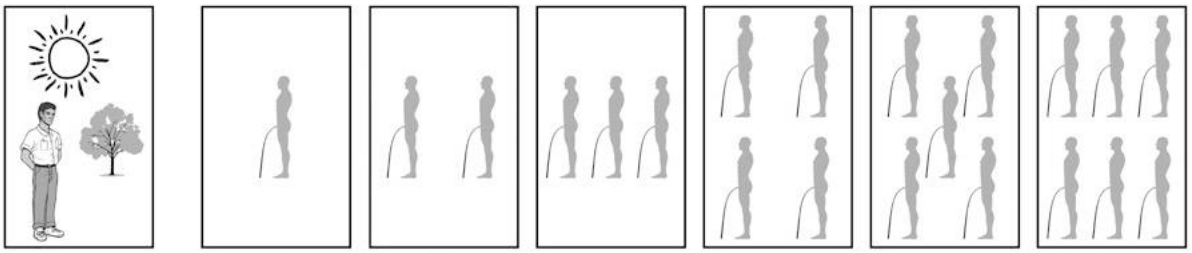
Visual Prostate Symptom Score



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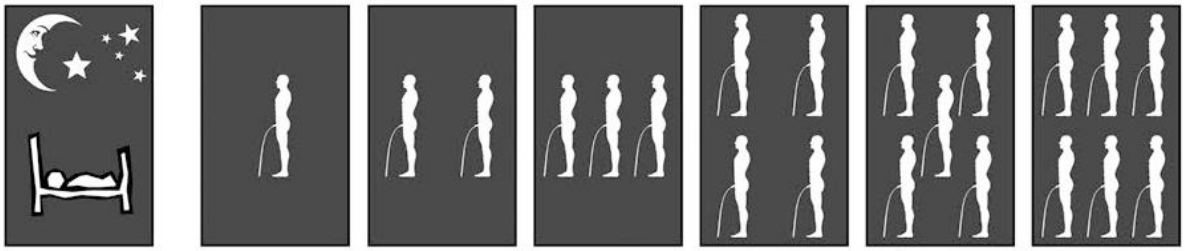

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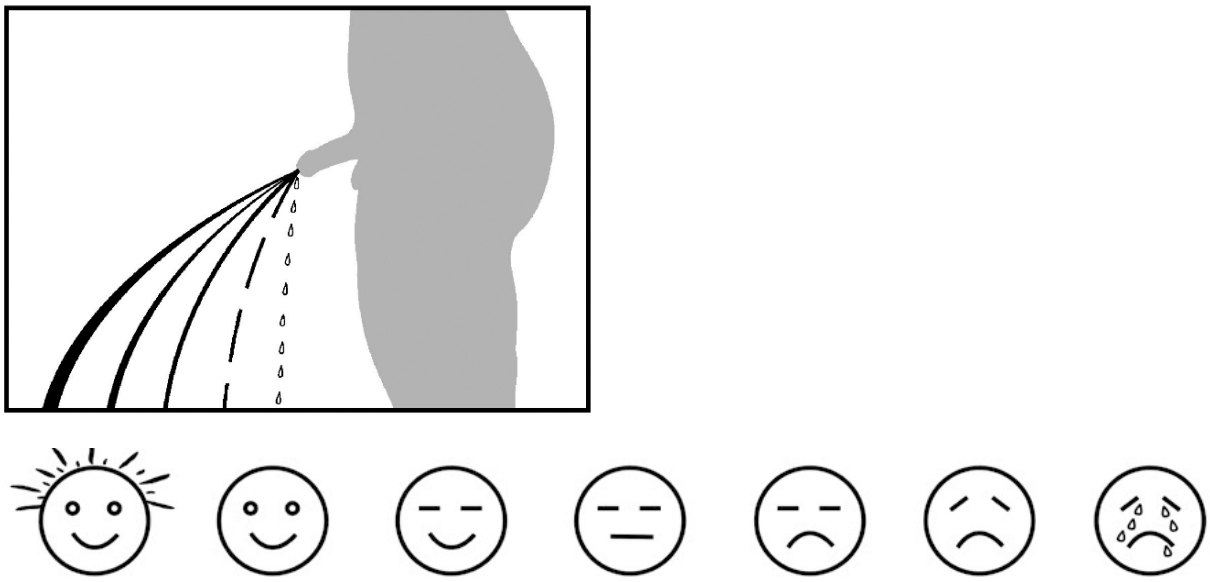

Picture-1

Dr. Kamlesh Kumar, et. al. "Assessment of symptomatic Benign Prostatic Hyperplasia by Visual Prostate Symptom Score in illiterate or less educated patients and its comparison with International Prostate Symptom Score." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(06), 2022, pp. 21-30.