

The importance of patient perception in the clinical assessment of benign prostatic hyperplasia and its management

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INTRODUCTION

BPH is a common disorder of ageing men, occurring in 19–30% of men aged >50 years [1,2], and is therefore a significant contributor to the daily practice of urologists and primary-care physicians. Furthermore, this problem is expected to increase as a result of the growing proportion of the elderly in the general population. Clinical BPH is defined as at least two of the following: moderate-to-severe LUTS (IPSS ≥ 8), an enlarged prostate (≥ 30 mL) and a decreased peak urinary flow rate ($Q_{max} < 15$ mL/s).

LUTS describe a combination of storage (irritative) symptoms, e.g. nocturia, increased urinary frequency and urgency, and/or voiding (obstructive) disturbances, e.g. decreased and intermittent force of stream and hesitancy. Considerable evidence has confirmed the chronic nature of BPH and the risk of disease progression, characterized by increases in prostate volume, deterioration in Q_{max} and LUTS, episodes of acute urinary retention (AUR) and the need for BPH-related surgery.

For the clinician to adequately consider the needs of individual patients with BPH, understanding the benefits and adverse effects of therapy, and gaining an insight into the impact of the disease on the patient and his partner, is critical. The aim of this review is to evaluate the impact of BPH on patients and their families.

BPH FROM THE PATIENTS' PERSPECTIVE

While symptoms and symptom severity are important determinants of healthcare-

seeking behaviour, one study suggests that 'bother', frequency of symptoms and interference caused by symptoms are the factors that drive men to consult a physician [3]. Another study suggests that worry and embarrassment about urinary symptoms are key in determining consulting behaviour [4]. Severely bothersome nocturia, dysuria, daytime repeat voiding, wetting clothes and urgency independently predict decreased patient satisfaction with their urinary condition [5]. Men with moderate-to-severe symptoms report, on average, 4–6 times the degree of bother and interference with their daily activities and twice the level of worry than men with mild symptoms [6]. The patient's perception of the bothersome nature of symptoms, rather than merely their presence or absence, is therefore an important consideration in disease-specific measures of health-related quality of life (HRQoL).

Several community surveys have shown that QoL measures correlate more closely with irritative symptoms (frequency, urgency or nocturia) than with obstructive symptoms (weak stream, hesitancy, etc.) or objective measures (urinary flow, prostate volume, etc.). This suggests that irritative symptoms have a greater negative effect on patients' QoL [7,8]. In a Scottish community-based study, half of men with BPH reported interference with at least one living activity (e.g. the ability to sleep, participate in outdoor sports or to travel). Furthermore, almost 20% of men of working age with BPH reported that urinary dysfunction interfered with at least one of their daily living activities most or all of the time. This degree of interference was experienced by only 3% of men in the same age group without BPH [9].

About 30% of men with BPH (compared with $\approx 15\%$ of men without) would limit their intake of fluids before bedtime or before

travel, or avoid places that may not have toilet facilities (Fig. 1). This may significantly compromise the QoL of these men and their families, as well as hindering working practices and the performance of the affected man [10]. Further European research reported that the aspects of QoL most negatively affected are lack of sleep, anxiety and worry about the disease, outdoor mobility, leisure, daily activities, sexual activities and satisfaction with sexual relationships [11].

Using validated generic (not disease-specific) health profiles, e.g. the Short Form (SF)-36 or EuroQoL, several population-based studies have assessed the effect of BPH and LUTS on general health status. Increasing symptom severity was associated with worsening physical role, social functioning, vitality, mental health and perception of general health, whereas the increasing bothersome nature of BPH/LUTS was associated with worsening of all dimensions of general health status and QoL [12].

One population-based study showed that the impact of symptoms on QoL domains is altered by the presence of comorbidities. In the entire study population, severely bothersome urinary symptoms were associated with a reduction in QoL in three domains (social function, role-emotional and mental health), but there was no association with physical functioning and general health perception when controlling for disease states. However, in men with no comorbidity, urinary symptoms were substantially related to physical functioning and general health perceptions [13].

In a further study in New Zealand, the scores of each of the eight domains of the generic SF-36 questionnaire for men aged 45–64 years and ≥ 65 years, awaiting a prostatectomy, were compared with those from the general population. Men aged

≥45 years awaiting prostatectomy had significantly lower HRQoL in the domains of role-physical, bodily pain, general health perception, social functioning, role-emotional and mental health (Fig. 2). In addition, men aged ≥65 years also had significantly lower vitality (reduced social functioning and decreased mental health) [14].

In a UK study, men classed as being of low priority for TURP were asked to complete the Nottingham Health Profile and the EuroQoL (measuring mobility, self-care, usual activities, pain/discomfort, anxiety/depression) at the time of entry onto the TURP waiting list, and again 6 months later. There was a deterioration in all domains except social interaction, although the degree of social interaction for the BPH patients was lower than that of healthy elderly men. The most notable deterioration was in the 'energy' domain of the Nottingham Health Profile. The EuroQoL also tended to show deterioration over a 6-month period in mobility, self-care, usual activities and pain dimensions of patients with BPH. For the EuroQoL tariff (a composite score), there was a significant worsening of HRQoL over the 6 months of observation, from 0.83 to 0.77 [15].

THE IMPACT OF BPH ON QoL COMPARED WITH OTHER CHRONIC DISEASES

The use of the SF-36 and EuroQoL generic questionnaires enables comparison among different diseases. Using the EuroQoL, Fig. 3 compares moderate and severe LUTS with two other chronic conditions: BPH has a similar impact on HRQoL as epilepsy requiring surgery, and asthma [16–18]. Figure 4 compares chronic obstructive pulmonary disease (COPD) using the SF-36: in all domains except physical functioning, patients with BPH had a worse QoL than patients with COPD (those not presenting with an exacerbation) [19,20]. Further SF-36 data show that LUTS have a similar effect on mental health and general health as suspected peptic ulcer, varicose veins, low back pain and menorrhagia [12]. Mozes *et al.* [13] showed a notable negative impact of urinary symptoms on the mental health domain of QoL, which was greater than other disease states such as lung disease .

However, generic QoL questionnaires may not capture certain elements of health status of particular relevance to men with BPH. For

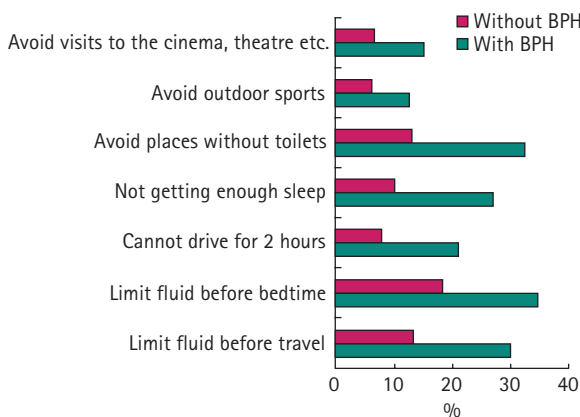


FIG. 1. Percentage of men in whom urinary symptoms affect living activities at least some of the time. Reproduced with permission from [10].

FIG. 2. SF-36 mean scores: BPH patients and general population males by age group.

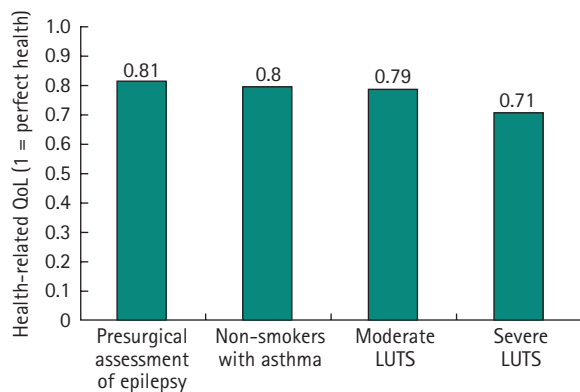
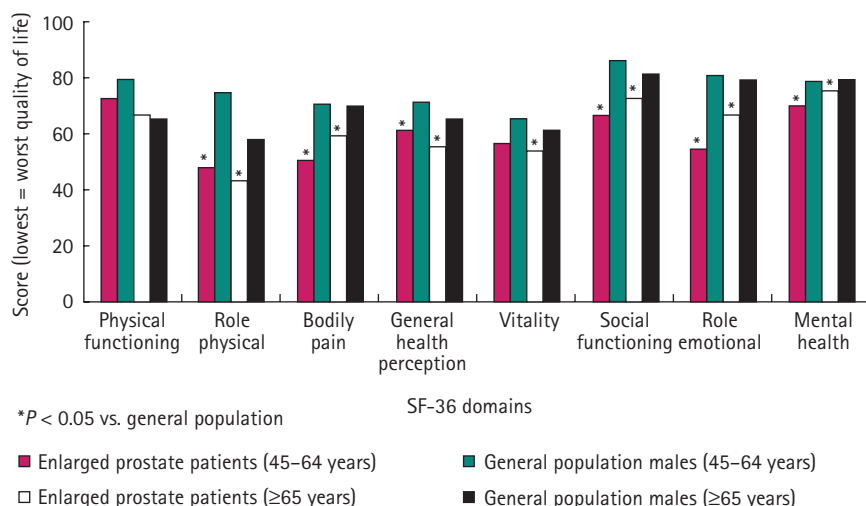


FIG. 3. The HRQoL (EuroQoL) impact of three chronic diseases.

example, the SF-36 does not directly enquire about sleeping patterns, the quality of sleep or embarrassment resulting from health status, all of which significantly affect both the patient and his family.

SEXUAL FUNCTION

Sexual function is considered an important aspect of QoL but no consensus has been reached on whether there is a distinct

FIG. 4. Impact of BPH and COPD on the domains of the SF-36.

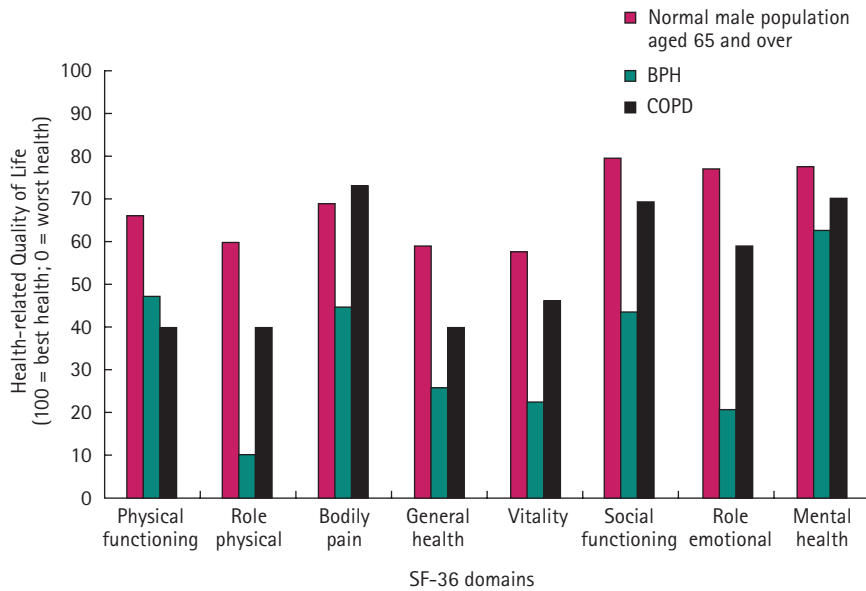
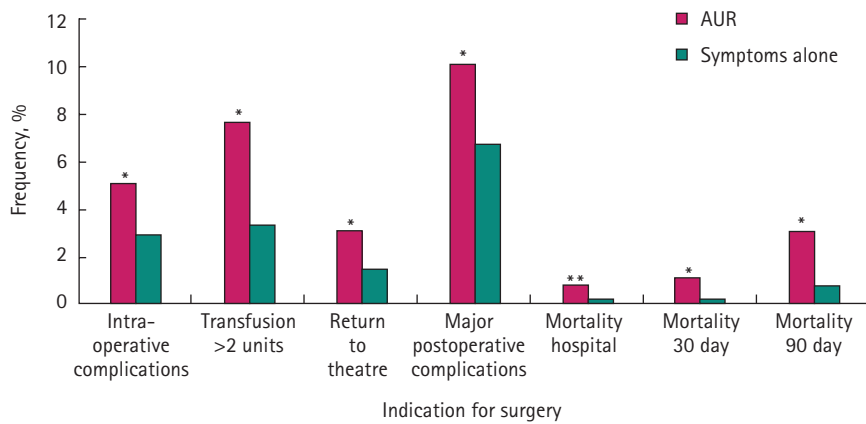


FIG. 5. Incidence of men with complications in hospital and mortality during and after prostatectomy by indication (AUR or symptoms).



*P < 0.001; **P = 0.024 vs. symptoms alone

relationship between LUTS and sexual function, or whether the two are merely common occurrences among middle-aged and older men. However, some studies have shown that sexual dissatisfaction increases with increased severity of LUTS. In the ICS-BPH international study of men aged ≥45 years who reported to one of 12 clinics, >70% of men of any age group found that the effect of LUTS on their sex lives was a problem, and 45% reported that their sex lives were spoiled by LUTS. Storage symptoms, in particular incontinence, had a greater

association with sexual dysfunction than voiding symptoms, a finding concordant with the ICS-BPH UK community study [21]. In contrast, a French community study of men aged 50–80 years reported that symptoms of hesitancy, straining, reduced stream and wet underclothes were most strongly associated with sexual dysfunction [22].

The UrEpiK study showed that erectile dysfunction, defined as a score of 0–4 using O’Leary’s Sexual Function Inventory (which addresses sexual drive, erections, sexual

problem assessment and overall satisfaction), was more likely in men with an IPSS of 8–35 than in those with a lower symptom score (odds ratio 1.39, 95% CI 1.23–1.92) [23]. None of these studies answer sufficiently the question of whether sexual dysfunction is directly related to LUTS or whether the two are merely common occurrences among older men.

However, the potential for BPH treatment options to positively or negatively affect sexual function should be considered and fully discussed with the patient. In one study assessing libido, sexual activity, erection capacity and rigidity after BPH therapy (surgery, α-blockers or finasteride), 66% of patients showed no change in these variables, while 20% reported positive and 11% reported negative changes [24].

FEAR OF AUR AND SURGERY

An average 60-year-old man has a 23% risk of developing AUR if he lives to the age of 80 years [25]. AUR results in prostatectomy in 24–42% of men in Britain and North America, and patients who avoid surgery with a successful trial without catheter are at high risk of requiring surgery within a year [26,27]. Furthermore, a UK audit showed that men who have a prostatectomy as a result of AUR have a greater risk of perioperative complications and of death at 30 days (relative risk, RR, 26.6), and 90 days (RR 4.4) after surgery than those who undergo elective surgery for symptoms alone [27]. The percentage of patients requiring transfusion or a second operative procedure was also greater in those undergoing initial vs elective surgery as a result of AUR (P < 0.001, Fig. 5) [27].

Recent data confirm that the potential for AUR and/or surgery is a major concern to patients with BPH [28,29]: 57% of patients were significantly concerned about the prospect of AUR, and 67% about surgery, while 68% felt that the insertion of a catheter would have a worse impact on their QoL than surgery [28]. A patient survey in France investigating expectations and perceptions of 5α-reductase inhibitor therapy showed that patients were most concerned that treatment should reduce the risk of major urological complications and the need for surgery (88% and 93%, respectively). Improving symptoms and QoL were rated as secondary [29].

OBJECTIVES AND PATIENT PREFERENCES FOR BPH MANAGEMENT

Traditionally, therapeutic management in BPH has focused on improvements in symptoms and urinary flow rate. However, the focus is shifting towards reducing the risk of AUR and the need for surgery. Baseline PSA levels and prostate volume are considered in treatment decisions because of increasing evidence showing their effect on the risk of disease progression [30,31].

In a study from the USA designed to assess the effect of an educational programme to facilitate shared decision-making for selecting BPH treatment, patients were presented with the risks and benefits of watchful waiting and surgery [32]. As a result of a stated preference to avoid surgery, the investigators recommended that men with moderate-to-severe symptoms should be fully informed of their treatment options. The consequence of this study was a shift in preference from prostatectomy, as shown by a subsequent reduction in the rate of surgery [33]. The conclusions to be drawn from these data are first, the well-being of patients who are fully informed can be increased by involving them in treatment decisions, and second, BPH surgery is a treatment option, but also a risk that some patients may prefer to avoid in the short- and long-term.

In a discrete-choice experiment (an attribute-based method of data collection and analysis), a questionnaire was administered to 211 men aged >40 years randomly selected from the UK general population. Respondents were willing to wait up to 8 months for an improvement in symptoms if the treatment they received reduced the risk of surgery by an absolute 1%, and up to 2 months if they could experience an absolute 1% reduction in the risk of AUR [34]. These results show that the patient's perception of his disease, its symptoms and complications, is crucial in determining appropriate treatment decisions that rely on shared decision-making and adequate information flow between the patient and doctor.

BPH FROM THE PARTNERS' PERSPECTIVE

Almost all partners experience some morbidity as a consequence of the patient's condition, with the most common concerns

being disturbed sleep (28%), psychological burden (66%), inadequate sex life (48%), fear of prostate cancer (62%) and fear of surgery (82%) [35]. Limited social life, difficulty performing tasks outside the home, and pity for the patient are also frequently reported [36]. The most negative scores were those related to cancer and fear of prostate surgery, and the extent of partner morbidity correlated well with the patients' symptom severity. In an international epidemiological study of urinary diseases in the general population, men and their partners were administered the IPSS, the SF-12 (a short version of the SF-36), and the BPH Impact Index [37]. The physical and mental components of HRQoL were negatively associated with the frequency of LUTS in their partner. However, the magnitude of the effect on the woman is smaller than the effect of LUTS on the patient.

CONCLUSIONS

BPH is prevalent among older men and has a greater negative effect on most domains of the SF-36 than COPD (in patients not presenting with exacerbation). Three crucial components of BPH should inform management decisions: it is a progressive disease for many men; BPH symptoms and their impact on the patient are heterogeneous and therefore the effect of the disease from the patient's perspective should be elicited; and the patients' preferences for treatment options should be considered.

Patient perceptions are receiving greater emphasis as part of clinical decision-making. The variability of relationships between symptom severity and the likelihood that the symptoms will be bothersome implies that reliance on an aggregate symptom score alone will not capture the true impact of symptoms in individual men. Rather, treatment success will depend on improvements in the aspects of the disease that are of most concern to the patient. To factor patient preference into treatment decisions, the physician should be able to adequately inform the patient of the benefits and risks of the appropriate treatments. Selecting an inappropriate treatment, or not including the patient's preference, may lead to a cascade of therapies and unmet expectations, and increase the economic and human burden of the disease.

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CONFLICT OF INTEREST

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- Abbreviations:** Q_{max} , peak urinary flow; AUR, acute urinary retention; (HR)QoL, (health-related) quality of life; SF, Short-Form; COPD, chronic obstructive pulmonary disease; RR, relative risk.