

Patient's quality of life and coping style influence general practitioner's management in men with lower urinary tract symptoms: The Krimpen Study

Esther T. Kok¹, Arthur M. Bohnen¹, J.L.H. Ruud Bosch², Siep Thomas¹ & Frans P.M.J. Groeneveld¹
¹Department of General Practice, Erasmus MC, Rotterdam, The Netherlands (E-mail: e.vanderwerf-kok@erasmusmc.nl); ²Department of Urology, University Medical Center Utrecht, Utrecht, The Netherlands

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Abstract

Purpose: To identify patient characteristics associated with general practitioner's (GP) initial treatment decision in men with lower urinary tract symptoms (LUTS) and to test the hypothesis that a different coping style of patients results in different GP behaviour regarding treatment. **Materials and methods:** A longitudinal, population-based study with a follow-up period of 6.5 years was conducted among 1688 men aged 50–78 years old. Data were collected on quality of life, symptom severity based on the International prostate symptom score (IPSS) and coping. Information on primary care seeking and GP's initial management during 2 years of follow-up of all participants was collected from the general practitioners record. **Results:** Data were obtained of 68 men, without a history of LUTS, who had a first GP visit for LUTS during the study period. In 54.4% of the cases the GP prescribed medication, independent of symptom severity. In the group of men with a bad disease-specific QOL those with a high passive-reaction-pattern were treated less frequently than those with a low passive-reaction-pattern. **Conclusion:** Findings from this quantitative study are consistent with the hypothesis that different coping styles of patients may result in different GP behaviour regarding treatment. The use of the coping style passive-reaction-pattern has a large influence on GP's initial management in men with LUTS.

Key words: Coping styles, General practitioner, IPSS, Lower urinary tract symptoms (LUTS), QOL, Treatment, UCL

Introduction

Treatments of lower urinary tract symptoms (LUTS) include watchful waiting, pharmacological treatment and referral for surgical interventions, and characteristics of both the patient and the general practitioner (GP) may influence decisions related to treatment alternatives. Characteristics such as the duration of the GP's training [1], sex [2] and psychosocial orientation [3] are known to influence the GP's decision to refer a patient to a specialist. Research on the influence of patient characteristics on referral has resulted in many unresolved controversies. Some studies suggest that referral rates rise, for example, with patient's age [4]

or low socio-economic status [5, 6], whereas others suggest no effect of these factors [3, 7, 8]. However, these studies mainly focus on referral rates rather than on the management of newly developed LUTS.

Because the aim of treatment in men with LUTS is to improve their quality of life (QOL) patient characteristics may play an important role in treatment decisions [9]. Although coping behaviour of patients may well influence the policy of the GP [10], the impact of coping behaviour has not yet been established in LUTS.

This study aimed to identify patient characteristics associated with the GP's initial treatment decision (watchful waiting vs. pharmacological treatment/referral) in men with LUTS and to test

the hypothesis that a different coping style of patients results in different GP behaviour regarding treatment.

Subjects and methods

Study design

The data presented here were obtained as part of the Krimpen Study on male urogenital tract problems and general health status. The design of this large community-based cohort study has been described in detail [11]. Briefly, the Krimpen Study was performed to gain information on male urogenital tract dysfunction and general well-being among all men aged 50–78 years living in a Dutch municipality near Rotterdam. Men without radical prostatectomy, prostate or bladder cancer, neurogenic bladder disease or a negative advice from their GP (in case of a serious disease with a short life expectancy), who were able to complete questionnaires and attend the research centre, were invited for the study. All men entering the study provided written informed consent. The Medical Ethical Committee of the Erasmus Medical Centre Rotterdam approved the study.

Data of 1688 responders (50%) were collected via a self-administered 113-item questionnaire, which included questions about symptom frequency, quality of life and also addressed the topics marital status, number of children, education level, smoking behaviour and drinking habits. Data on coping were also collected. Additional measurements such as height, body weight, blood pressure measurement and urinalysis were performed at the research centre. In co-operation with the urology department of the Erasmus MC the following tests were performed: serum prostate-specific antigen, digital rectal examination, transrectal ultrasound of the prostate, uroflowmetry and post-void residual urine volume. Prostate biopsies were taken to detect prostate cancer.

Three consecutive rounds of follow-up were performed with an average follow-up period of 2.1, 4.2 and 6.5 years, respectively. In each of these rounds all measurements were repeated. Men who did not respond after baseline, first follow-up or second follow-up and did not meet the exclusion

criteria were nevertheless also re-invited for participation in the third follow-up round.

No information on test results, except for the value of the prostate specific antigen (PSA), was given to the participant or his GP.

Assembly of GP data

A flow chart of the GP data assembly is presented in Figure 1.

In the Netherlands, all inhabitants are registered with a GP. When the patient visits an emergency room, a specialist, or a (substitute) physician in the weekend or at night, their own GP is always informed. Data about these visits, contacts and prescription of medication are stored in the computerized medical records. All practising GPs ($n = 16$) in Krimpen aan den IJssel gave access to their computerized medical records. The GP medical records of all the participants of the Krimpen Study ($n = 1688$) were checked with the "N6" computer program (QSR International Pty. Ltd. Melbourne, Australia). This program can search text files on keywords and select files based on keywords. Two researchers independently analysed the files selected by the N6 program and filled in a score form separately. They both scored whether or not there was a history of LUTS (i.e. before the start of the study) and noted whether the participant had visited his GP for LUTS and the first date this took place. Also the treatment choice was noted. When the medical file showed that a person had moved from the GP's practice (lost to follow-up) or was deceased, the date of this event was noted. To validate the use of the N6 program the medical files that showed no hits by the N6 (using 82 keywords) were checked manually. The check gave a 100% negative predictive value for the search by the N6 program (none of the files reported visits for LUTS). No loss of follow-up (missing files) occurred in the GP data.

Questionnaires

LUTS

To assess the occurrence and frequency of LUTS we used the seven-item International prostate symptom

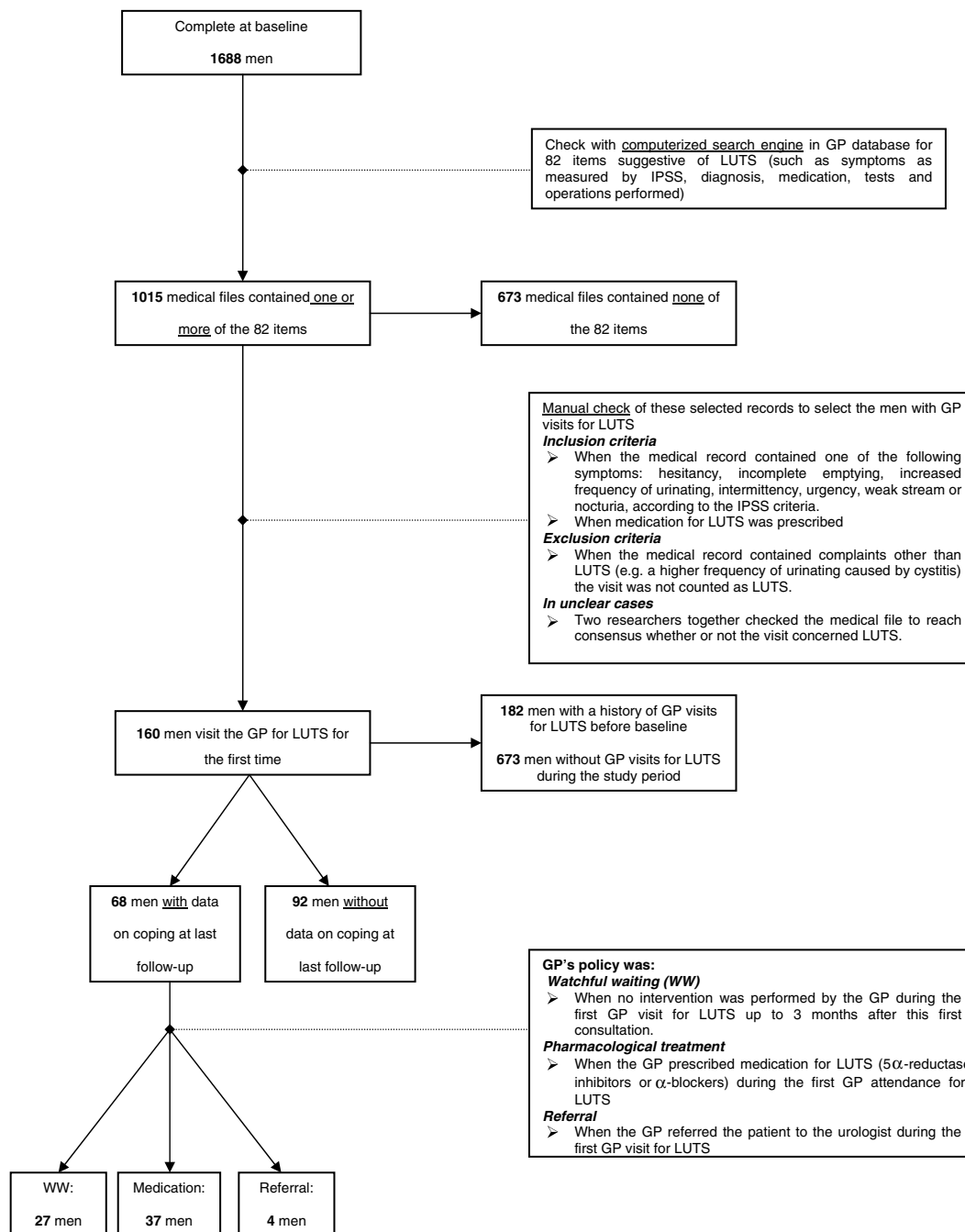


Figure 1. Data assembly in general practitioner database.

score (IPSS) [12]. The scoring range is 0 (no symptoms) to 35 (maximal symptoms). Scores can be classified, according to the classification of the

American Urological Relationship (AUA), into three categories: mild (0–7), moderate (8–19) or severe (20–35) [12].

Quality of life

To assess the generic QOL of the men we used the mini-Inventory of subjective Health (ISH) [13] and the sickness impact profile (SIP) [14]. The mini-ISH is a 13-item questionnaire on subjective health with a score range from 0 to 13 [13]. The three domains of the SIP used in this study are 'Emotions' ('Emotions, feelings and sensations', 9 items), 'Recreation' ('leisure pastimes and recreation', 8 items) and 'Social' ('social interaction', 20 items). For each category, a score was computed based on weighting factors for each item, providing scores ranging from 0 to 100 [14]. In contrast to the generic QOL questionnaires, disease-specific questionnaires measure QOL based on items closely related to the specific disease and are therefore expected to be more sensitive. To measure the effect of LUTS on QOL we used the QOL question of the IPSS [12] (IPSS-QOL) and the BPH impact index (BII) [15]. The IPSS-QOL can be rated on a scale from 0 to 6 [12]. The BII is a four-question index with a score of 0–13 designed to assess the impact of the symptoms of LUTS on health status [15].

For all QOL scales used (disease-specific and generic) a higher score indicates a worse QOL.

Coping

To assess coping behaviour we used the Utrecht coping list (UCL) [16]. In the UCL, coping behaviour is regarded as a personal disposition, e.g. a trait. The respondent is asked to imagine 'problems in general'. The UCL consists of 47 items describing a specific coping behaviour. Answers are on a 4-point scale ranging from 'seldom or never' to 'very frequently'. The instrument was validated for use in a Dutch population [16]. The UCL consists of seven coping scales representing coping styles. The names of the styles and examples of items (between brackets) are: A: active problem solving ('putting things in a row', 'seeking a way to solve a problem'), P: palliative reaction ('looking for distraction', and looking for good company'), AV: avoidance ('avoiding difficult situations' and 'letting things go'), S: seeking social support ('discussing the problem with friends or family' and 'asking somebody for help'), PR: passive reaction ('being overwhelmed by problems'), E: expression of emotions ('showing anger to the person who is

responsible for the problem'), and R: Reassuring thoughts ('imagining that things could be worse'). The scores representing the minimal and maximal level (scale) of the coping styles are given in Table 1.

Co-morbidity

The GP's initial policy can be influenced by a contra-indication due to co-morbidity and corresponding pharmacological treatment. In the present study a person was assumed to have co-morbidity e.g. diabetes mellitus, Parkinson's disease, chronic inflammation of urinary tract or heart problems, if he indicated on the questionnaire that he consulted his GP or a medical specialist for at least one of these diseases during the last 3 months. We have validated the answer on the questionnaire with the GP record. The check gave a 100% positive predictive value for the answer on the questionnaire (all co-morbidities mentioned on the questionnaire were also reported in the GP record).

Statistical analysis

Because the data on patient characteristics were assembled at various points in time (baseline, FU1, FU2 and FU3), data collected closest to and before the date of the first GP visit for LUTS were used in the current analyses. In this way possible temporal variation in health status is also taken into account.

The relationship between patient characteristics (age; SIP social, emotion and recreation; mini-ISH; IPSS; IPSS_QO; BII; the seven coping styles separately; co-morbidity; educational level and marital status) and the GP's initial management (watchful waiting vs. pharmacological treatment/referral) was evaluated by means of logistic regression (SAS PROC GENMOD). To correct for the influence of the GP on the treatment policy we used this technique to take correlation between men in the same GP practice into account. Analyses were performed both in univariate and multivariate models. Variables with a p -value ≤ 0.15 in the univariate analyses were entered into the multivariate model.

For the multivariate model a two-sided p -value of 0.05 was considered significant. For these variables

Table 1. Characteristics of the study population before their first visit to the GP for LUTS

	Men (N = 68)	
	Percentage	
<i>Co-morbidity</i>		
No	85.3	
Yes	14.7	
<i>Marital status</i>		
Alone	5.9	
Living together	94.1	
<i>Educational level</i>		
No education/Primary school	14.7	
Higher education	85.3	
<i>Age (years)</i>		
IPSS (0–35)	Mean (SD)	
	64.3 (6.8)	
	9.0 (6.2)	
<i>Quality of life</i>		
Mini-ISH (0–13)	4.5 (8.6)	
SIP social (0–100)	5.2 (9.1)	
SIP emotion (0–100)	2.3 (6.5)	
SIP recreation (0–100)	10.2 (17.5)	
IPSS_QOL (0–6)	1.9 (1.2)	
BII (0–13)	1.2 (2.0)	
<i>Coping styles</i>		
	Mean (SD)	20th–80th percentile Reference*
Active problem solving (A) [7–28]	17.0 (3.9)	15–20
Palliative reaction (P) [8–32]	15.5 (3.8)	12–18
Avoidance and passive expectancy (AV) [8–32]	15.0 (3.2)	12–17
Seeking social support (S) [8–24]	10.7 (2.8)	9–13
Passive reaction (PR) [7–28]	10.7 (2.8)	9–12
Expression of emotions and anger (E) [3–12]	6.0 (1.7)	5–6
Reassuring thoughts (R) [5–20]	11.2 (2.3)	10–13

*Values for the age category 55–65 years based on data from a study on employees of the Dutch Railway, and a random sample of the Dutch population (8).

[Numbers between brackets represents minimal and maximal level (scale)].

odds ratios are presented with 95% confidence intervals (CI_{95%}).

The SAS (version 8.2) program was used for all analyses.

Results

Data were obtained of 160 men, without a history of LUTS, who had a first GP visit for LUTS during the study period (Figure 1). For 68 of these men data on coping behaviour were also available.

Table 1 presents the characteristics of these 68 men collected closest to and before their first GP visit for LUTS. The average age was 64.3 years

(SD 6.8 years). Mean symptom scores and QOL scores indicate a moderate severity of LUTS and a reasonably good generic and disease-specific QOL. The coping styles of our respondents correspond with the mean scores of a Dutch reference group [16].

Table 2 shows the GP's initial management in the men's first GP visit for LUTS. In 54.4% of the cases the GP prescribed medication, independent of symptom severity.

Table 3 gives the results of the univariate logistic regression analyses of patient characteristics in the GP's initial management. Men using the coping style Palliative reaction and Passive-reaction-pattern received treatment less frequently.

The odds ratios of these continuous variables were 0.93 (C.I.^{95%}: 0.89–0.97) and 0.85 (C.I.^{95%}: 0.79–0.91), respectively. Of the other patient characteristics, men with co-morbidity, and a worse social or emotional generic QOL received treatment less frequently ($p < 0.15$), while men having a worse disease-specific QOL more often received treatment ($p < 0.15$).

Table 4 gives the adjusted odds ratios and 95% confidence intervals as result of the multivariate logistic regression analyses of patient characteristics in the GP's initial management. Men with a worse disease-specific QOL received treatment more often. However, men with a worse disease-specific QOL using the coping style passive-reaction-pattern (PR) received treatment less frequently.

Table 2. General practitioner's management in men's first GP attendance for LUTS

	Total (N = 68)		Mild LUTS* (N = 37)		Moderate to severe LUTS* (N = 31)	
	N	%	N	%	N	%
Watchful waiting	27	39.7	16	43.2	11	35.5
Pharmacological treatment	37	54.4	20	54.1	17	54.8
Referral to urologist	4	5.9	1	2.7	3	9.7

*Mild (IPSS: 0–7), moderate to severe (IPSS: 8–35).

Table 3. Univariate associations of patient determinants with general practitioner's management in men's first GP visit for LUTS

	Treatment vs. watchful waiting (N = 68)		
	OR	<i>p</i> -value	C.I. ^{95%}
<i>General</i>			
Age	0.99	0.52	0.95–1.02
Living together ^a	0.47	0.59	0.57–1.92
Higher education (Educational level) ^a	1.03	0.96	0.34–3.13
<i>Symptoms and diseases</i>			
IPSS	1.05	0.31	0.96–1.15
Co-morbidity ^a	0.38	0.10**	0.12–1.20
<i>Quality of life</i>			
Mini-ISH	0.97	0.31	0.91–1.03
SIP social	0.96	0.11***	0.91–1.01
SIP emotion	0.93	0.09**	0.86–1.01
SIP recreation	1.00	0.50	0.98–1.01
IPSS_QOL	1.47	0.11***	0.91–2.29
BII	0.97	0.83	0.70–1.32
<i>Coping styles</i>			
Active problem solving (A)	1.00	0.97	0.84–1.20
Palliative reaction (P)	0.93	<0.0001*	0.89–0.97
Avoidance and passive expectancy (AV)	0.99	0.83	0.91–1.07
Seeking social support (S)	1.02	0.77	0.88–1.20
Passive reaction (PR)	0.85	0.002*	0.79–0.91
Expression of emotions and anger (E)	0.87	0.17	0.71–1.06
Reassuring thoughts (R)	0.98	0.84	0.84–1.15

*Variable with a p value < 0.05 to be entered in the multivariate model.

**Variable with a p value < 0.10 to be entered in the multivariate model.

***Variable with a p value < 0.15 to be entered in the multivariate model.

^aDichotomous variable.

Discussion

The present study shows that in more than half of the men first visiting their GP with LUTS the GP prescribed pharmacological treatment. The GP's initial management was highly related to the disease specific QOL of the patient in interaction with coping.

In the Krimpen Study, 50% of the invited men responded. A questionnaire was sent to those that did not participate at baseline to investigate the characteristics of this group. As the prevalence of men with IPSS >7 was lower in the non-participants [11], we have to conclude that the prevalence and incidence of men with LUTS in fact must be slightly lower than measured in the present study. However, because this study reports about the relationship between patient characteristics and GP's initial treatment decision and the relation with the coping styles of the patient this bias has not influenced our results. In this type of epidemiological research the reliability of the electronic medical record is a problem because the information entered by the physician is often variable. However, because of the large number of keywords (n = 82) used in the search our concerns about missing hits are minimal.

Data on coping behaviour were only collected in the third follow-up round, which could have narrowed the sample size of men we used in the analyses. No loss of follow-up (missing files) occurred in the GP data. The 68 men with data on coping behaviour with a first GP visit for LUTS, can be seen as a core group completing all the follow-up rounds: they are slightly younger, have less co-morbidity, a lower IPSS and a better QOL than the remainder. Nevertheless, this small sam-

ple was sufficiently large to yield significant relationships and the small confidence limits around the estimates strengthen our findings. Since the UCL regard coping as a personal disposition the moment of the data collection on coping (only at third follow-up) does not limit our results.

The participants themselves and their GPs enrolled in our study were not exposed to information about prostate volume, flow, IPSS and QOL scores. Only the value of the PSA was given to the GP, in relation to the need to detect prostate cancer and not initially for the GP's management in men with LUTS. In the present study, fear of prostate cancer does not play a role in the GP's management, because men with prostate cancers have already been filtered out of the study population. To check this assumption we entered 'the level on PSA' in the analyses, which did not change the presented results; PSA was not significantly related to the treatment. As information on digital rectal examination (DRE) was mostly missing in the medical records of the men visiting their GP for LUTS, we were not able to add information about prostate volume in our analyses.

Other studies have also investigated GP management in men with LUTS. Similar to our results, Verhamme et al. [17] also reported that almost 50% of their study group received pharmacological treatment. In addition, two theoretical studies addressed the intention to treat in men with LUTS: Wolters et al. [18] and Hees [19] used a hypothetical case of a man, aged 50 and 65, respectively, with LUTS to determine the GP's initial management. Both studies showed a higher percentage of pharmacological treatment and referral than in our study. Thus, there seems to be a remarkable difference between the GP's intention to treat a man with LUTS and what happens in 'real life' practice. Both Verhamme et al. [17] and Hees [19] report a positive relationship between treatment and the following patient characteristics: age, type of urological symptoms at diagnosis, co-morbidity and bother. The present study also contained data on the generic QOL and coping styles of the patient. Coping seemed highly relevant in the GP's initial treatment management. To our knowledge ours is the first study that has shown and quantified the relation between coping of the patient and the initial management of GPs in men with LUTS.

Table 4. Multivariate model of patient determinants associated with general practitioner's management in men's first GP visit for LUTS

	Treatment vs. watchful waiting (N = 68)	
	OR ^{adjusted}	C.I. _{95%}
IPSS_QOL	8.80	3.94–19.49
Passive reaction (PR)	1.11	0.95–1.30
IPSS_QOL*Passive reaction* (PR)	0.86	0.82–0.90

*Interaction term.

The present study showed that men with a bad disease specific QOL received treatment more often. This result is in line with the guidelines [9, 20] which recommend treatment to improve the patient's QOL. Our multivariate model showed that in the group of men with a bad disease-specific QOL those with a high passive-reaction-pattern were treated less frequently than those with a low passive-reaction-pattern.

This finding suggests a large influence of this specific coping style on the GP's initial management in men with LUTS. This may be explained by the consideration that men with deteriorated disease specific QOL who used the coping style 'passive-reaction-pattern' were overwhelmed by their voiding problems that may have resulted in a pessimistic view on their own health. In this situation, the patient and GP may have agreed not to treat but to choose for watchful waiting initially. However, based on this single study we do not want to speculate on the (non) importance of the other coping styles. These styles could be of importance if they interact with factors not determined in our study, e.g. the coping style of the GP. We conclude that the findings of this quantitative study are consistent with the hypothesis that different coping styles of patients may result in different GP behaviour regarding treatment.

This study provides a starting point to elucidate and quantify the influence of the coping style of the patient on the GP's initial treatment policy. Further studies on the influence of coping styles on the GP's initial policy for LUTS, and into the relationship between coping style and the development of QOL is needed before practical advice on these matters can be given to GPs.

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Address for correspondence: Esther T. Kok, Department of General Practice, Erasmus MC PO Box 1738, 3000 DR Rotterdam, The Netherlands

Phone: +31-10-4087629; Fax: +31-10-4632127

E-mail: e.vanderwerf-kok@erasmusmc.nl