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Sexual abuse evaluation
in urological practice

J.J.H. Beck

Colofon

Sexual abuse in urological practice

J.J.H. Beck

The studies of this thesis have been performed in the Departement of Urology , Leiden University Medical Center, Leiden, The Netherlands and HagaZiekenhuis, The Hague, The Netherlands. They were initiated and supported by the Pelfic Floor & Sexuality Research Group Leiden.

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Sexual abuse evaluation in urological practice

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The studies of this thesis were initiated by the
Pelvic Floor and Sexuality Research Group Leiden

Why sexual abuse?

"Why sexual abuse as topic of your dissertation?", is a question asked frequently. As an answer I often tell the anecdote of my urology training in Leiden.

While performing a rectal examination, a patient started screaming and shouted that I was raping him. When he calmed down, he told me that he was sexually abused as a teenager and during the examination he relived the abuse. I got interested in the subject of sexual abuse and wondered what the prevalence was of sexual abuse. Are patients with sexual abuse avoiding the urologist? Is the prevalence of sexual abuse in the urologic clinic lower than in general population?

Do the sexual abused patients develop certain symptoms? Do urologists see patients with a history of sexual abuse more often than other medical experts, like a dermatologist for example? Furthermore, do urologists ask their patients about sexual abuse history? Because, I didn't! Otherwise I would have taken precautions, before performing a rectal examination to the patient in the anecdote. I also wondered if some signs of sexual abuse are available, so an urologists can predict the chance of sexual abuse history and ask for it. Hardly any literature on this topic was found in literature related to urology. This in contrast to paediatricians and gynaecologists who did a lot of research on this topic of sexual abuse. Enough reasons for me to further explore this topic!

Voor mijn vrouw Junivère,
mijn kinderen Raúl, Lucas & Roan

Voor mijn ouders:
Mam
papa Henk Beck (+1990)
vader Martien Sas (+2010)

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PART I:

INTRODUCTION

Chapter 1:**General introduction and aims of the thesis**

Prevalence of sexual abuse

Sexual abuse (SA) is defined by International Society for the Prevention of Child Abuse and Neglect as "a social and medical problem in which a child under the age of consent is involved in an act resulting in sexual satisfaction of an adult or connivance of such an act"¹. The frequency in which children are exposed to sexual advances from adults varies according to the definition of abuse, the age range studied, and the methods of ascertainment. The prevalence of SA is estimated to be 12% to 25% for females and 8% to 10% for males². SA can also occur after childhood, for example as rape or sexual violence. Some assumptions can be made regarding SA-prevalence in urological practice. The prevalence of SA at an outpatient urology clinic is the same as in general population. Or, prevalence is lower than in general population, because patients with SA tend to avoid the urologist. Or, prevalence is higher, because SA can give certain urological complaints, for which they tend to see the urologist more often.

Inquiring sexual abuse

Clinicians have limited time with each patient and are responsible for screening for many different disorders and conditions. In practice, inquiry about SA is not part of routine care, even when clinicians believe it may be relevant^{3,4}. Despite a possible relation of urologic symptoms and a history of SA, little to nothing is known about SA history taking in routine urological practice. This is in sharp contrast to paediatric, gynaecological, general physician, gastro-enterological and psychiatric practice²⁻¹⁰. Over 20 years ago, gynaecologists argued that a brief sexual inquiry was much more helpful than waiting for the patient's own story about SA¹¹. Fear for unpredictable patient reactions may be an important reason why physicians hardly ask about SA history¹². However asked in a compassionate and accurate way, it seldom will lead to unpleasant reactions¹³. Asked in a questionnaire before their first visit to a urologist, most female patients mention their SA history¹⁴. Does this imply that sexual abuse survivors think it is important information for their urologist?

Inquiring sexual functioning

As in inquiring SA, inquiring female sexual dysfunctions (FSDs) can help the physician in treating the patient better. And as in inquiring SA, the urologists' attitude towards inquiring FSDs is unclear. A number of studies have demonstrated a strong association between pelvic floor disorders, lower urinary tract symptoms, overactive bladder with or without urinary incontinence, and FSD¹⁵⁻²². Does this imply that urologist screen their patients for FSD?

Sexual abuse and physical complaints

It is postulated that SA might lead to a variety of symptoms in one domain of the pelvic floor²³. Several studies mentioned the urological domain of the pelvic floor²⁴⁻²⁸. A lot of studies mentioned

the gastro-intestinal domain²⁹⁻³⁵. Also the gynaecological domain of the pelvic floor is related to SA history³⁶⁻⁴¹. It has been hypothesized that patients with pelvic floor dysfunction have voiding difficulties due to a higher tone at rest of the pelvic floor⁴². Many of them have episodes of obstructive voiding complaints⁴². As in benign prostate hyperplasia, long-lasting bladder outlet obstruction can lead to storage symptoms like urinary frequency, urgency, urgency incontinence, and nocturia⁴³⁻⁴⁵. Can we relate certain pelvic floor complaints to SA? Can we relate certain urological complaints to SA?

Pelvic floor and sexuality research group

The Department of Urology of the Leiden University Medical Center has a long tradition of male sexual function research. In 1978 professor U. Jonas started implanting the semi-rigid erection prosthesis. Professor P. Donker and P. Walsh wrote the article on nerve-sparing radical prostatectomy, as a result of a visit of Walsh to Donker in Leiden in 1981⁴⁶. Giesbers, Kropman, Meinhardt and Lycklama à Nijeholt published several studies about the diagnosis and treatment of erectile dysfunction. In 2004 the Department of Urology founded the Pelvic Floor & Sexuality Research Group Leiden. The mission of the research group is initiating pelvic floor and sexuality related research. Since the kick-off in 2004 three dissertations were completed. In 2008 Dr. Petra Voorham- Van der Zalm completed the thesis "Towards evidence based practice in pelvic floor physiotherapy" and Dr. Henk Elzevier completed the thesis "Female sexual function in urological practice". In 2010 Dr. Milou Bekker completed the thesis "Female sexual function and urinary incontinence". This thesis will be the fourth thesis of the Pelvic Floor & Sexuality Research Group Leiden.

Aims of the thesis

The primary aim of this study is to investigate the prevalence of SA in a urological outpatient clinic. Can differences be made in urological population, i.e. general urological clinic, a university urological clinic and a tertiary university pelvic floor clinic? Do urologists inquire about FSD and SA history? And if so, what percentage of the Dutch urologist does so? What do SA patients think about screening for SA history? Can we find predicting urological or pelvic floor symptoms as a sign of SA history?

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PART II

**PREVALENCE AND EVALUATION OF SEXUAL ABUSE
AND FEMALE SEXUAL DYSFUNCTION**

Chapter 2:

The place of female sexual dysfunction in the urological practice: results of a Dutch survey

Based on:

Bekker MD, Beck JJH, Putter H, van Driel MF, Pelger RCM, Lycklama à Nijeholt AAB, Elzevier HW. *The place of female sexual dysfunction in the urological practice: results of a Dutch survey*. J Sex Med. 2009 Nov;6(11):2979-87.

Abstract

Introduction: Female sexual dysfunction (FSD) is a highly prevalent and often underestimated problem. There is a strong association between urological complaints and FSD.

Aim: The purpose of this survey was to evaluate how Dutch urologists address FSD in their daily practice.

Methods: We performed an anonymous survey study. A 17-item anonymous questionnaire was mailed to all 405 registered members of the Dutch Urology Association (urologists and residents in urology).

Main Outcome Measures: The survey results.

Results: One hundred eighty-six complete surveys of eligible respondents were returned (45.9% response rate). Ten respondents (5.5%) stated that they ask each female patient for sexual function; 81.8% stated that they ask for sexual function when a patient has certain complaints. In specific complains about lower abdominal pain (86.8%), incontinence (73.6%), urgency or frequency (77.1%), or urinary tract infections (66.7%) are reasons for inquiring FSD. Many respondents (40.3%) do not think that FSD is meaningful in a urological practice. The majority of respondents (91%) underestimate the frequency of FSD in a urological clinic. Respondents who believe the frequency of FSD to be at least 30% tend to ask more often for sexual function than the rest of the group ($p=0.08$).

Conclusion: Overall, many urologists do not consistently ask each female patient for sexual function and underestimate the prevalence of FSD. For the majority of the members of the Dutch Urological Association, FSD is not part of routine urological practice. There is, therefore, a need for better implementation of education and training at both undergraduate and postgraduate levels.

Introduction

Female sexual dysfunctions (FSDs) are highly prevalent and often underestimated problems in the general community¹. However, FSDs have not yet been studied as extensively as male sexual dysfunction. Improved knowledge on the female pelvic anatomy and recent insights in female sexual physiology helped to classify FSDs more adequately. Today, FSD is a term used to describe various sexual problems, such as low desire or interest, orgasmic difficulties, diminished arousal, and dyspareunia^{2,3}. Due to the use of different instruments, published prevalence estimates of FSD show a great deal of variation⁴. FSD is considered common in the general population, with a quoted prevalence of 43%^{1,5,6}. In these studies, however, distress caused by sexual dysfunction has not been inquired. The prevalence of sexual problems accompanied by personal distress was estimated to be 12–24% from large population based surveys in the United States^{1,3,5}. A number of studies have demonstrated a strong association between pelvic floor disorders, lower urinary tract symptoms, overactive bladder with or without urinary incontinence, and FSD⁷⁻¹⁴. The prevalence of FSD in sexual active women attending a urogynecologic outpatient clinic ranges from 48% to 64%, which is higher than the afore mentioned 43% in the general population^{15,16}. In patients attending a urogynecologic outpatient clinic, FSD is unlikely to be the sole complaint, i.e., the reason for women to consult their urogynecologist. Only seven out of 70 women with FSD presented with this problem at a urogynecology clinic¹⁶. Therefore, women who seek urological care will be of greater risk of having sexual function disorders and urologists should be aware of this potential coexisting problem. Besides the frequent coexistence of FSD in patients with urological complaints, urological surgery such as (simple/radical) cystectomy, prolapse, and incontinence surgery may enhance FSD^{17,18}. Sexual dysfunction may arise due to nerve or vessel damage and/or alteration of vaginal anatomy. In this respect, the growing interest in the preservation of the neurovascular bundles is an important new topic in oncological pelvic surgery¹⁹. Literature on incontinence surgery is conflicting: some reports suggest a deterioration of sexual function²⁰⁻²². Some report an equivocal effect²³⁻²⁷. Whereas others show improvement²⁸⁻³⁴. Whatever the effect may be, the possible effects on sexuality should be discussed both pre and postoperatively with the patient and her partner. A web-based survey of 3,807 women aged 18–75 years in the United States indicated that the most important barriers for women to seek help were embarrassment and the idea that physicians would not be able to provide adequate help³⁵. Only 42% of this cohort sought help from a physician. In our experience, there appears to be two major groups of women suffering from FSD, namely those who present symptoms and those who prefer not to broach the subject and perhaps hope that the discussion will emerge during the consultation. Therefore, the doctor is the pivot on which discussing FSD hinges, and he or she should therefore be proactive and endeavour to identify sexual problems. Recent surveys among members of the American Urogynecologic Society (AUGS) and the British Society of Urogynecology (BSUG) showed that only a minority screened all their patients for FSD^{36,37}. Dutch urologists have not yet been surveyed regarding patient assessment of FSD in their practices.

Aims

The purpose of this survey was to investigate whether Dutch urologists and residents address patients' sexual function as part of history taking, to delineate perceived barriers to perform this assessment, and to document current attitudes toward FSD.

Methods

In the autumn of 2007, a questionnaire was mailed to all urologists and residents registered at the Dutch Urologic Association (405). Nearly all Dutch urologists and residents are members of this association (20% female, 80% male). The 17-item questionnaire (Appendix) was designed by a urologist/sexologist from our clinic in order to address FSD-related practices at outpatient clinic visits, beliefs, and overall impression of FSD and FSD related to surgery. Five of the 17 questions concerned the topic of taking the history of possible sexual abuse. Sexual abuse is strongly related to urological complaints and sexual dysfunction. Because of its complexity, it was decided to present these data separately. Demographic data included type of practice, medical degree (resident or urologist), gender, and age. The survey was accompanied with a letter explaining the objectives of the study. All data were collected anonymously. We analyzed the data using SPSS release 16 (SPSS Inc., Chicago, IL, USA). Bivariate associations between demographic information and frequency of FSD screening were calculated using the chi-square procedure and P values <0.05 were considered statistically significant. Ethical approval was not required and thus not asked for in this study.

Results

Of the 405 mailed surveys, 190 were completed and returned. From the 215 nonrespondents, we did not receive a refusal note or notification of unavailability to complete the questionnaire. Four questionnaires were from non-eligible respondents, namely paediatric urologists. Their questionnaires were excluded for analysis. All returned surveys were complete, i.e., more than 80% of all applicable questions were answered. For analysis, we used the completed questionnaires of eligible respondents which gave a response rate of 45.9% (186/405). One hundred respondents requested the survey results to be mailed at the end of the study (53.8%). The majority of respondents were urologists (79.6%) and most (65.5%) were between 31–50 years old. Consistent with the distribution within the surveyed population, there were more male respondents (82.8%) than female (17.2%). Forty-seven percent of the respondents worked in a district general hospital, 29% in a district general teaching hospital, and 24% in an academic teaching hospital. The demographic characteristics are presented in Table 1. Demographic information was not tracked by the Dutch Urologic Association and, therefore, characteristics of nonrespondents were not available for comparison. One of the primary goals of the survey was to assess if urologists and residents address patients' sexual function as part of history taking. Only 10 respondents (5.4%) stated that they ask each female patient for her sexual function. In contrast, 81.8% stated that they ask for

sexual function when a patient has a specific complaint like lower abdominal pain (86.8%), urgency or frequency (77.1%), incontinence (73.6%), and urinary tract infections (66.7%). Among “other complaints” to ask for female sexual function, the respondents mentioned dyspareunia, pelvic floor dysfunction, and neuropathic bladder disorders. See Table 2.

Table 1: Demographic characteristics of respondents (n= 186)

Demographic characteristic	n	(%)
Age (years)		
20-30	3	1.6 %
31-40	66	35.5%
41-50	56	30.1%
51-60	51	27.4%
>60	8	4.3 %
missing	2	1.1 %
Gender		
Male	154	82.8%
Female	32	17.2%
Medical degree		
Urologist	148	79.6%
Urology resident	38	20.4%
Type of clinic/practice		
Academic (teaching) hospital	44	23.7%
District general teaching hospital	54	29.0%
District general hospital	88	47.3%

Table 2: Asking for sexual function (n=186)

	n	%
Do you ask each patient for sexual function?	n=186	
Yes	10	5.4%
No	176	94.6%
Do you ask for sexual function when a patient has certain urological complaints?	n=176	
Yes	144	81.8%
No	32	18.2%
Which complaints?	n=144	
Lower abdominal pain	125	86.8%
Urgency or frequency	111	77.1%
Incontinence	106	73.6%
Urinary tract infections	96	66.7%
Hematuria	4	2.8%
Other	9	6.3%

We were also interested in reasons why 176 respondents do not ask each patient for sexual function; 40.3% stated that they do not find it meaningful in urological practice, 22.7% mentioned insufficient knowledge about how to ask for FSD, others stated lack of time (18.2%), and others stated lack of knowledge in therapeutic options if they diagnose FSD (13.6%). Only a minority (10.8%) said that they find it difficult to bring up the subject. Other reasons given (12.5%) were "older patients (especially those without a partner)," "no relevance to ask for FSD, for example, when a patient suffers from urinary stone disease," and "FSD belongs to the field of a gynecologist." There was a significant difference in age of respondents who stated to have insufficient knowledge about how to ask for FSD, i.e., respondents aged 40 years and younger (16/65) more often feel their insufficient knowledge in asking for FSD as a reason not to ask for sexual function than older colleagues (24/109) ($p=0.01$). Another goal of our survey was to document physicians' perception of the prevalence of FSD. Respondents were asked to estimate how many of their patients are experiencing sexual dysfunction. The majority reported less than the estimated 48–64% of patients^{15,16}. Of the respondents, 37.8% believed that less than 10% of their patients suffer from

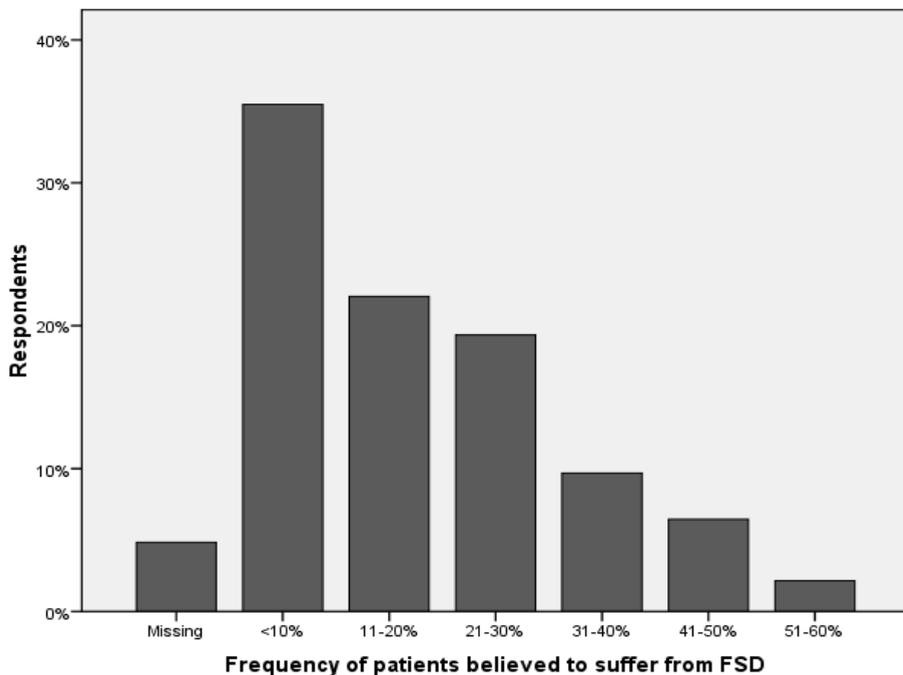
FSD. Prevalences of 11–20%, 21–30%, 31–40%, 41–50%, and 51–60% were estimated by 22.8%, 20.6%, 10%, and 6.7%, respectively. Only 2.2% estimated between 51% and 60%. No respondents perceived a prevalence of FSD higher than 60%. Nine respondents acceded to have no insight in the frequency of FSD in their patient population whatsoever and, therefore, did not give a percentage (missing) (Figure 1). In the group of responders, who thought of a prevalence of at least 30% or higher (n=58), 10.3% asked each patient for sexual function and 84.5% asked for sexual function when a patient had a specific urological problem. Compared with the rest of the group, respondents who believed the frequency of FSD to be at least 30% tended to ask for FSD more often, but no statistical significant difference was found ($p=0.08$). These groups showed no significant difference in asking for sexual function when a patient has a specific urological complaint ($p=0.57$).

Table 3: Frequency of asking for sexual function when a patient has a specific urological complaint and respondent characteristics

Demographic characteristics	Ask for sexual function when a patient has a urological complaint		Total	p value
	Yes	No		
Medical degree				
Urologist	126	22	148	1.00
Resident	28	10	38	
Type of practice				
Academic (teaching) hospital	36	8	44	0.98
District general teaching hospital	45	9	54	
District general hospital	73	15	88	
Gender				
Male	127	27	154	1.00
Female	27	5	32	
Age				
< 40 years	56	13	69	0.69
> 40 years	97	18	115	

One hundred seventy (91.4%) respondents stated that female sexual function should be prior to a radical cystectomy, the potential effects of surgery on sexual function were discussed with patients by 83.9% of the respondents, by 81.2% prior to a simple cystectomy, and by 58.6% prior to incontinence surgery. After surgery, patients are asked for changes in sexual function by 47.3%. integrated in postgraduate urological training programs. Analysis performed to determine whether certain demographic factors had any impact on frequency of asking for sexual function when a patient has a specific urological complaint showed no statistical differences in frequency of screening bases on medical degree, type of practice, gender, or age.

Figure 1: Physician perceptions of the prevalence of FSD in their patient population



Discussion

This study was performed to assess the approach of Dutch urologists toward FSD in urological patients. Most urologists do not consistently address FSD. The prevalence of FSD is underestimated and not all urologists address FSD prior and following surgery. This survey had a response rate of 45.9% which is equal to the previous survey among AUGS members but lower than the 67% response in the British survey^{36,37}. Our response rate is higher than the average, observed in postal

questionnaires³⁸. This may be due to a second preannounced mailing, after which, the response rate nearly doubled. This study has some limitations. First, the use of a nonvalidated questionnaire with dichotomic answers and without cultural components were taken into account. Second, as nonrespondents may have different beliefs, attitudes, and practice patterns than responders, there may be a selection bias. As in all questionnaire studies, there may be a bias in reporting, as the respondents may overestimate frequency of asking for sexual function in their practices. However, attempts were made to reduce such a bias by making the survey anonymous. Recent surveys among members of the AUGS and among members of the BSUG showed that only a minority screen all patients for FSD (22% and 0%, respectively). Lack of time, uncertainty about therapeutic options, and older age of the patient were cited as potential reasons for failing to address sexual complaints as part of routine history^{36,37}. Although we did not use the same questionnaire, some comparisons to the American and British surveys can be made. Similar in all three surveys is that only a minority of respondents ask each patients for female sexual (dys)function. When asked for reasons not to address FSD, the majority of the American and British respondents stated lack of time to screen for FSD after surgery (78% and 66%), while in our survey, only 18.2% stated lack of time. Another objection given in these surveys was fear of, by asking for FSD, offending their patients. In our survey, we did not ask for this objection; however, respondents did not state this barrier at the "Other" answers. When asked for reasons not to ask, female sexual function is thought not to be meaningful in a urological practice, while it is known that there is a strong association between FSD and urological problems. Obviously, this is contradictory. Unfortunately, the survey did not give us information about why urologists think female sexual function to have no meaning in their practices. One would expect an increased attention to sexual disorders in urologists with special interest in treatment of lower urinary tract disorders, but unfortunately, we have no data on this issue. Although respondents stated they think female sexual function not to be meaningful, they agreed that female sexual function should be part of their graduate and postgraduate training. Even though female sexual function is included as a required topic in the education of urology residents and currently part of graduate and postgraduate training programs, a reason not to ask for sexual function was insufficient knowledge about how to ask for FSD, especially for respondents aged 40 years and younger. This illustrates the fact that, apparently, current training programs are insufficient. Furthermore, even though older urologists have dealt with sexual dysfunction in men for decades, the interest in female sexual function lags behind. Only during the last 5 years, female sexuality has become a topic in the training of urology residents. Important in this respect is the underestimation of the frequency of FSD in a urological practice. The majority reported a prevalence far below the estimated prevalence of 48–64% of patients^{15,16}. Reasons for this underestimation could be insufficient education or lack of interest in FSD. The group of 58 respondents who estimated a frequency of FSD of at least 30% does not ask more often for FSD. So, even if a doctor has knowledge of the prevalence of FSD, asking for sexual

function is still not part of the daily routine. Lack of knowledge and also understanding may contribute to many doctors' lack of willingness to deal with the sexual issues. It is known that urological surgery such as a cystectomy, prolapse, and incontinence surgery may enhance FSD^{17,18}. Prior to a (simple or radical) cystectomy, the possible effects on sexual function are discussed with patients by most of the urologists (81.2% and 83.9%). Before incontinence surgery, however, only 58.6% discuss potential risks. Perhaps, not all urologists are aware that not only surgery such as a cystectomy but also surgery for incontinence may cause FSD. Remarkably, even though most urologists discuss it prior to surgery, only 47.3% ask if changes in sexual function have occurred after surgery. Unfortunately, the questionnaire does not provide us the information why urologists do not ask for changes in sexual function after surgery, but this topic does need attention. After surgery, patients should be assessed for sexual problems and informed on therapeutic options. In both the FSD, as the surgery related FSD section of the questionnaire, no gender-related differences were found. The results of this survey show that awareness of FSD is apparently insufficient. There is a need for better implementation of education and training at both undergraduate and postgraduate levels. Education should inform clinicians about the prevalence and the current knowledge of FSD, especially in relation to urological complaints and treatments. Furthermore, training should be based on studies on women's attitudes toward sexuality in relation to the expectations of the physician. Women expect initiatives from physicians in raising the issue of sexual health. They want both routine and more frequent physician inquiry about sexual concerns, as well as a more open, clear, comfortable, and empathic discussion of these issues³⁹. Physicians should be aware of their patients' needs in this area. Because lack of time is also mentioned as a reason not to ask for sexual function, urologists should be trained in time management strategy. Furthermore, training should aim to teach urologists how to communicate more effectively with patients as this is important in assessment of FSD⁴⁰. Finally, they should be informed about the validated questionnaires which could help them in their assessments of female sexual function.

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Appendix

Female sexual function

1. Do you ask each female patient for sexual function? Yes No
2. Do you ask for sexual function in female patients with specific urological complaints? Yes No
3. If so, which urological complaints?

Hematuria	Yes <input type="checkbox"/> No <input type="checkbox"/>
Incontinence	Yes <input type="checkbox"/> No <input type="checkbox"/>
Urgency and frequency	Yes <input type="checkbox"/> No <input type="checkbox"/>
Lower abdominal pain	Yes <input type="checkbox"/> No <input type="checkbox"/>
Urinary tract infection	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other, _____	
4. A reason not to ask is;

I don't find it meaningful in a urological clinic	Yes <input type="checkbox"/> No <input type="checkbox"/>
Not enough time	Yes <input type="checkbox"/> No <input type="checkbox"/>
I find it difficult to address	Yes <input type="checkbox"/> No <input type="checkbox"/>
I have insufficient knowledge how to ask for FSD	Yes <input type="checkbox"/> No <input type="checkbox"/>
If a patient has FSD, I am unsure about therapeutic options	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other, _____	
5. What percentage of female patients that you see do you believe experience sexual dysfunction? (Please give a percentage) _____ %

Sexual abuse:

6. Do you always ask patients before performing a physical examination for a history of negative sexual experiences (sexual abuse)? Yes No
7. Do you ask patients with specific urological complaints for a history of negative sexual experiences (sexual abuse)? Yes No
8. If so, which urological complaints?

Hematuria	Yes <input type="checkbox"/> No <input type="checkbox"/>
Incontinence	Yes <input type="checkbox"/> No <input type="checkbox"/>
Urgency and frequency	Yes <input type="checkbox"/> No <input type="checkbox"/>
Lower abdominal pain	Yes <input type="checkbox"/> No <input type="checkbox"/>
Urinary tract infection	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other, _____	
9. A reason not to ask is;

I don't find it meaningful in a urological clinic	Yes <input type="checkbox"/> No <input type="checkbox"/>
Not enough time	Yes <input type="checkbox"/> No <input type="checkbox"/>
I find it difficult to address	Yes <input type="checkbox"/> No <input type="checkbox"/>
I do not know what/how to ask	Yes <input type="checkbox"/> No <input type="checkbox"/>
If a patient has a problem I am unsure about therapeutic options	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other, _____	

10. What percentage of female patients that you see do you believe have a history of sexual abuse? (Please give a percentage) _____%

Surgery and female sexual dysfunction

11. Do you address the (possible) effects of surgery on female sexual function prior to the following procedures?

Radical cystectomy	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Simple cystectomy	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Incontinence surgery	Yes <input type="checkbox"/>	No <input type="checkbox"/>

12. Do you ask for the (possible) effects of these surgeries on female sexual function after the procedure? Yes No

13. Should female sexual function related to urology be integrated in post-graduate training programs? Yes No

Demographics

14. What is your age? _____ Years

15. What is your gender? Male
 Female

16. What is your profession? Urologist
 Resident urology
 Paediatric urologist

17. Where do you work? Academic
 (teaching) hospital
 District general teaching hospital
 District general hospital

Chapter 3:

Female sexual abuse evaluation in the urological practice: results of a Dutch survey

Based on:

Beck JJH, Bekker MD, Van Driel MF, Putter H, Pelger RCM, Lycklama à Nijeholt AAB, Elzevier HW. *Female sexual abuse evaluation in the urological practice: results of a Dutch survey*. J Sex Med. 2010 Apr;7 (4 Pt 1):1464-8.

Abstract

Introduction: There is a strong association between urological complaints and a history of sexual abuse, especially in females. It is not known whether urologists integrate these facts in their daily practice.

Aim: To evaluate whether Dutch urologists address the issues of sexual abuse in their female patients and to evaluate their perception of sexual abuse prevalences.

Methods: A five-item anonymous questionnaire was mailed to all 405 registered members of the Dutch Urology Association (urologists and residents).

Main outcome measures: The results of the survey.

Results: One hundred eighty-six surveys of eligible respondents were returned (45.9% response rate). A total of 68.8% stated that they always ask their female patients about sexual abuse before doing the physical examination. Overall, 79.3% said to do so when a patient has certain urological complaints: 77.6% in case of lower abdominal pain, 62.1% in urgency or frequency, 41.4% in incontinence, 29.3% in urinary tract infections, and 3.4% in hematuria. The majority of the respondents (74.3%) estimated the frequency of sexual abuse in their urological clinic to be equal or less than 10%.

Conclusions: Nearly 70% of the responding Dutch urologists and residents ask their female patients about possible sexual abuse. They estimate the frequency of sexual abuse in their female patients to be equal or less than 10%.

Introduction

International estimates of the prevalence of sexual abuse are high. Recently, the Committee on Child Abuse and Neglect suggested that each year, approximately 1% of children experience some form of sexual abuse, resulting in the victimization of 12% to 25% of females and 8% to 10% of males¹. After the first scientific report by Reinhart et al. in 1989 about sexually abused children and urinary tract symptoms, several authors have found an association between urological symptoms and a history of sexual abuse in adult patients²⁻¹¹. Clinicians have limited time with each patient and are responsible for screening for many different disorders and conditions. In practice, inquiry about sexual abuse is not part of routine care, even when clinicians believe that it may be relevant^{12,13}. Despite the strong association of urologic symptoms and a history of sexual abuse, little to nothing is known about sexual abuse history taking in routine urological practice. This is in sharp contrast to paediatric, gynaecological, general physician, gastroenterological and psychiatric practice^{1;12-19}.

Aims

The purpose of our research was to evaluate the sexual abuse assessment by urologists and their estimation of sexual abuse prevalence in their female patients.

Methods

In the autumn of 2007, a questionnaire was mailed to all urologists and residents registered at the Dutch Urologic Association (n=405). All of them are member of this association (80% male, 20% female). The 17-item questionnaire, designed by the sexologist from our clinic, addresses female-sexual-dysfunction-related practices at outpatient clinic visits, beliefs and overall impression of female sexual dysfunction and female sexual dysfunction related to surgery²⁰. Five of the 17 items concern the topic of taking the history of possible sexual abuse (See Appendix: translated from Dutch). Demographic data included type of practice, medical degree (resident or urologist), gender, and age. The survey was accompanied with a letter explaining the objectives of the study. We analyzed the data using SPSS release 16 (SPSS Inc., Chicago, IL, USA). Bivariate associations between demographic information and frequency of sexual abuse screening were calculated using the chi-square procedure; $p < 0.05$ was considered statistically significant. Ethical approval was not required and was thus not asked for in this study.

Results

Of the 405 mailed surveys, 190 were returned. None of the returned surveys had a missing page and approximately 80% of all questions were answered. Daily adult urological care was the context of our study, so the questionnaires from paediatric urologists (n=4) were excluded for analysis. This gave a response rate of 45.9% (186/405). The majority of respondents were urologists (79.6%), and most of them (65.5%) were between 31 and 50 years old. In correspondence with the m/f ratio

in Dutch urology, there were more male respondents (82.8%) than female (17.2%). Forty-seven percent of the respondents worked in a district hospital, 29% in a general teaching hospital, and 24% in a university hospital. A total of 68.8% stated that they always ask their female patients for sexual abuse before doing the physical examination. Overall, 79.3% said to do so when a patient has certain urological complaints: 77.6% in case of lower abdominal pain, 62.1% in urgency or frequency, 41.4% in incontinence, 29.3% in urinary tract infections, 3.4% in hematuria, 3.4% in neurogenic bladder, 1.7% in dyspareunia, and 1.7% in pelvic floor dysfunction. The arguments for not asking about possible sexual abuse are summarized in Table 1; "Not important in urological practice" was mentioned most frequently. Demographic factors had no impact on the frequency of asking about possible sexual abuse (medical degree $p=0.56$, type of practice $p=0.46$, gender $p=0.21$, and age $p=0.62$). The majority (74.3%) of the respondents estimated the frequency of sexual abuse in their urological clinic to be equal or less than 10%. Prevalence rates of 11–20%, 21–30%, 31–40%, and 41–50% were estimated by 7.5%, 3.7%, 1.6%, and 0.5%, respectively. No respondents perceived a prevalence rate higher than 50%. Twenty-three respondents (12.3%) had no insight at all and, therefore, did not give a percentage. Respondents who estimated the sexual abuse prevalence to be higher than 10% did not ask for sexual abuse history more frequently than those who thought it to be equal to or less than 10% ($p<0.005$).

Table 1: Arguments for not inquiring for sexual abuse (n=58)

Argument	n	%
"I don't think it's important in urological practice."	20	34.5%
"I don't know what to do if a patient has experienced sexual abuse."	9	15.5%
"I find it difficult to bring up."	9	15.5%
"I don't have enough time"	6	10.3%
"Other" : sexual abuse history is not relevant for the treatment of kidney stones or colic pain	2	3.4%
Question not answered	12	20.8%

Table 2: healthcare providers asking for sexual abuse history

Authors	Type of health care provider	% that asks for sexual abuse	Year of Publication
Friedman et al. ¹²	Physicians	11%	1992
Walker et al. ²¹	General practitioners	4%	1993
Pearse et al. ²²	General practitioners	21%	1994
Read et al. ¹⁹	Psychiatrists	32.1%	1998
Pearse et al. ²²	General practitioners	21%	1994
Maheux et al. ¹⁶	General practitioners	2,3%	1999
Maheux et al. ¹⁶	Obstetricians-gynecologists	1.3%	1999
Ilnyckyj et al. ¹³	Gastroenterologists inquiring female IBS patients	50%	2002
Perscher et al. ²³	Gynecologists	0,5 %	2005
This report	Urologists inquiring female patients	68.8%	2010

Discussion

This study was performed to evaluate the sexual abuse assessment by Dutch urologists and their perception of sexual abuse prevalence in their female patients. To our knowledge, this is the first report on this topic ever. Most respondents (68.8%) consistently inquire about sexual abuse in their patients' history. This is higher compared to other health care providers^{12,13,16,19;21-23}. Their percentages are listed in Table 2. A possible explanation of the high percentage of Dutch urologists inquiring about sexual abuse is that the responding urologists overestimate their inquiring. A second explanation can be selection bias, because it is possible that only urologists with an affinity for inquiring abuse answered the questionnaire. It is also possible that urologists, in contrast to other health care providers, are not afraid of intimate questions like sexual abuse, because they also inquire their patients for erectile dysfunction or (coital) incontinence. Nevertheless, with these nuances in mind, it is still a surprisingly high percentage. This study has some limitations. The first limitation is our use of a non-validated questionnaire. As in most questionnaire studies, there may be a bias in reporting. The respondents may have overestimated the frequency of asking for sexual abuse. However, attempts were made to reduce such bias by making the survey anonymous. The response rate was 45.9%, which is higher than the average in postal questionnaires²⁴. This may be due to a second pre-announced mailing, after which the response rate nearly doubled. Over 20 years ago, gynaecologists argued that a brief sexual inquiry was much more helpful than waiting for the patient's own story about sexual abuse²⁵. A large cross-sectional, multicenter study of 3,641 females attending five gynaecological departments in Denmark, Finland, Iceland, Norway, and Sweden revealed that 92% had not talked to their gynaecologist about their history of sexual abuse²⁶. Fear for unpredictable patient reactions may be an important reason why physicians hardly ask about sexual abuse history²³. However, when asked in a passionate and accurate way, it seldom will lead to unpleasant reactions²⁷. Asked in a questionnaire before their first visit to an urologist, most female patients mention their negative experiences²⁸. This implies that sexual abuse survivors think it is important information for their urologist. It is important for urologist to address this issue with patients because a urological physical examination almost often implies an inspection and palpation of the genitals. This is in contrast to a primary care physician, who also examines less private body parts such as an ear or a shoulder. The importance of discussing abuse before performing a gynaeco-urological examination is clear. Survivors of sexual abuse rate their experiences with gynaecological care more negatively than controls, they have more negative feelings, and report more discomfort at almost every stage of the gynaecological examination. They also report more trauma-like responses during the gynaecological examination, including overwhelming emotions, intrusive or unwanted thoughts, memories, and feelings of body detachment^{17,18;29,30}. Physicians should realize that any kind of uro-gynaecological examination may trigger a flash-back of abuse and retraumatize these females³¹. In published literature, frequency, urge, incontinence and dysfunctional voiding are mentioned most frequently as urological symptoms

correlated to sexual abuse history^{3,5,6,8,10,11}. A pelvic floor dysfunction can be the link between sexual abuse history and urological symptoms. Sexual abuse history is more often found in patients with multiple pelvic floor complaints⁴. Pelvic floor dysfunction is correlated to urological complaints like frequency, urge incontinence, and dysfunctional voiding. Therefore, sexual abuse can give pelvic floor dysfunction, which can cause urological complaints. Most respondents in our survey think the prevalence rate of females with a history of sexual abuse to be equal or less than 10%. In the Netherlands, the prevalence rates of sexual abuse vary from 10.9% to 23.5% (Table 3). Further investigations of the impact of sexual abuse at daily urological care are mandatory.

Conclusion

Nearly 70% of the Dutch urologists ask their female patients about their sexual abuse history. They estimate the frequency of sexual abuse in a urological clinic to be equal to or less than 10%.

**Table 3: Prevalence of sexual abuse among females in
The Netherlands**

Authors	Dutch research population	Sexual abused number	Total number	Prevalence	Year of publication
Draijer et al. ³²	Females 20-40 years	248	1054	23.5%	1990
Lankveld et al. ³³	Non-oncologic gynecology patients	50	325	15.4%	1996
Van der Hulst et al. ³⁴	Low-risk pregnant women (non-clinical)	70	625	11.2%	2006
Lamers-Winkelmann ³⁵	11-18 years old students	108 *	989 *	10.9%	2007
Beck et al. ⁴	Female patients at a academic pelvic floor center	42	185	22.7%	2009

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Appendix

Sexual abuse:

Do you always ask patients before performing a physical examination for a history of negative sexual experiences (sexual abuse)? Yes No

Do you ask patients with specific urological complaints for a history of negative sexual experiences (sexual abuse)? Yes No

If so, which urological complaints?

Hematuria Yes No

Incontinence Yes No

Urgency and frequency Yes No

Lower abdominal pain Yes No

Urinary tract infection Yes No

Other, _____

A reason not to ask is;

I don't find it meaningful in a urological clinic Yes No

Not enough time Yes No

I find it difficult to address Yes No

I do not know what/how to ask Yes No

If a patient has a problem, I am unsure about therapeutic options

Yes No

Other, _____

What percentage of female patients that you see do you believe have a history of sexual abuse?

Please give a percentage _____ %

Demographics

What is your age? _____ Years

What is your gender? Male

Female

What is your profession?

Urologist

Resident urology

Paediatric urologist

Where do you work?

Academic (teaching) hospital

District general teaching hospital

District general hospital

Chapter 4:

Prevalence of sexual abuse among patients seeking general urological care

Based on: Beck JJH, Bekker MD, Van Driel MF, Roshani H, Putter H, Pelger RCM, Elzevier HW. *Prevalence of sexual abuse among patients seeking general urological care*. J Sex Med. 2011 Oct;8(10):2733-8.

Abstract

Introduction: Sexual abuse (SA) history can be found in the backgrounds of an important fraction of men (8-10%) and women (12-25%). Until now there are no data about this prevalence within a urological patient population.

Aim: To establish the prevalence of SA among men and women visiting a urological outpatient clinic and to assess their opinion on screening for SA by urologists.

Methods: A questionnaire to identify SA was translated into Dutch, English, and Turkish, and was adjusted for use in men. These questionnaires were anonymously distributed among 1,016 adult patients attending the urological outpatient clinic.

Main outcome measure: The self-reported prevalence of SA. Secondary outcome measures were data about the assailant, victim's age at the time of the abuse, if the abuse was disclosed to the urologist, if the urologist had asked for SA, and patient opinions on standard screening for SA in urological care.

Results: A total of 878 questionnaires were returned, giving a total response rate of 86.4% (878/1,016). Thirty-three patients refused to participate. This resulted in 845 filled-out questionnaires suited for analysis (845/1,016 = 83.2%). There were more male (75.7%) than female respondents (21.8%); 2.1% (13/624) and 13.0% (21/161) of the male and female respondents reported a history of SA, respectively. Almost 42% reported a stranger as assailant. In nearly 90%, the SA took place before adulthood: 56.2% in childhood and 31.2% in adolescence. Fifteen percent of the respondents with SA had it disclosed to their urologist. More than 70% of the abused respondents considered the idea to screen for SA in urological practice to be a good one.

Conclusions: The prevalence of SA in patients seeking urological care in the Netherlands is 2.1% for men and 13.0% for women.

Introduction

According to large population based surveys the prevalence rate of sexual abuse (SA) in western society range from 12 to 25 percent for females and from 8 to 10 percent for males^{1,2}. Several papers report about the association between a history of SA and specific urological complaints³⁻⁹. However, the prevalence of SA within a general urologic population never has been investigated. Noteworthy, Dutch urologist estimate the prevalence of SA in their female patient population to be less than 10%, which is lower than the percentages mentioned for the general population¹⁰.

Aims

The primary purpose was to determine the prevalence of a history of SA among male and female patients seeking general urological care. In addition, we investigated whether patients who had been forced to engage in unwanted sexual activities 1) had disclosed the SA to their urologist, 2) had been asked about SA by their urologist, 3) their own opinion with regard to standard screening for SA by urologists, 4) the identity of the assailant and 5) victim's age at which the SA occurred.

Methods:

A German questionnaire to measure the prevalence of SA among females seeking gynecological care was translated into Dutch, English and Turkish and also adjusted for males¹¹. From September 2008 to December 2008 these questionnaires were anonymously distributed among 1016 adult patients attending the urological outpatient clinic of the HagaHospital in The Hague, the Netherlands. A general practitioner and a psychiatrist were on call if a respondent became distressed completing the questionnaire. However, no distress was reported and emergency consultations were not necessary. The questionnaire was available in Dutch, Turkish and English. The last two were chosen while these are the most frequently spoken foreign languages in The Hague. Nine participants requested the Turkish and seven the English version. All attending patients received a letter explaining the goal of the study and the content of the questionnaire. Those who didn't want to participate marked "No, I don't want to participate". Part I included patient characteristics and two questions concerning a possible history of SA. The first "Have you ever been the subject of unwanted sexual attention such as having been propositioned, touched etc.?" was included to ensure that patients could differentiate between physical abuse and SA and the second "Have you ever been forced to have sexual activities that you did not want?" was intended to screen for SA. Possible answers to these two questions were "yes," "no," or "I don't know." Those who answered "yes" to the second question were asked to complete part II. This consisted out of five questions. The first was related to the first time of the SA: as a child (0-12 years), an adolescent (13-17 years), or as an adult (18+ years). The second question disclosed the identity of the assailant: parent, spouse, relative, friend, or stranger and the third revealed if the patient had ever talked to their urologist about SA. Response options were "yes," "no, because I did not consider the

information to be relevant to the urologist," and "no, because I was afraid to talk about the subject with the urologist." The fourth question was if their urologist had ever asked them for a history of SA and the fifth asked patients about their opinions with regards screening for SA by urologists. Throughout the study period the secretaries distributed the questionnaires every day to all patients visiting the outpatient clinic. A small mark was left on the patient identification card to prevent doubles. Patients were asked to fill in the questionnaire in the waiting room and to deposit it in a marked and secured box. The local Research Ethics Board gave approval.

Main Outcome Measure

The primary outcome measure was the self reported prevalence of SA. The data were entered into and analyzed with SPSS 16.0 (SPSS Inc., Chicago, IL). Descriptive statistics were used to estimate the prevalence of unwanted sexual attention and activities and to examine rates of disclosure and screening. Frequencies were calculated for categorical data, and means and standard deviations (SDs) for continuous ones. Secondary outcome measures were: the number of patients who had disclosed the SA to their urologist, the number of patients asked for SA by the attending urologist, their opinions about standard screening for SA abuse by urologists, age at which SA occurred and the identity of the assailant.

Results

A total of 878 questionnaires were returned, giving a total response rate of 86.4% (878/1016). Thirty-three patients notified not to participate. This resulted in 845 filled out questionnaires suited for analysis (845/1016=83.2%). In correspondence with the m/f ratio in Dutch urological patients, there were more male respondents (75.7%) than female ones (21.8%). Unfortunately 2.5% (21/845) did not depict their gender identity. Thirteen out of the 624 males (2.1%) reported a history of SA and 21 out of the 161 females (13.0%). When asked for a broader definition of abuse ("unwanted sexual attention") the prevalence was 4.1% (25/608) for the male respondents and 16.8% (26/155) for the female ones. The mean and median age of the participating males were respectively 63 and 66 years versus 59 and 57 for the females (not significant). Respondents younger than 60 reported more often a history of SA compared to those older than 60 (24 vs 10, $p<0.05$). Two of the 34 who reported SA, did not fill out the rest of the form, so 32 completed forms (11 males and 21 females) could be used for further analysis. Two out of the 32 respondents (both females) reported more than one assailant (parent and friend, parent and stranger). Both respondents were placed in the group "parent". Most respondents with SA reported a stranger as assailant, namely 41.9%. Compared to older ones, males under 60 accounted more often a stranger as assailant (85.7%) ($p<0.05$), while females above 60 reported more often a parent as assailant (Table 1). In nearly ninety percent the SA took place before adulthood: 56.2% in childhood (18/32) and 31.2% in adolescence (10/32), statistically not different for males/females or ages. Only 5 of

the 32 abused respondents (15.6%) had reported their SA history to their urologist. Half of them (16/32) had not given this information while they thought it was not relevant for their urologist. 25% (8/32) had not spoken about their SA, because it was their very first visit. Three respondents (9.4%) wrote that they were afraid to discuss the subject. Only one patient with a history of SA had ever been asked for it by her urologist. 71.9% of the abused respondents (23/32) supported the idea to screen for SA in urological practice. This did not differ neither with regards gender identity (72.7% of the males; 71.4% of the females), nor for age (73.9% for ≤ 60 and 66.7% for >60). Without any argument one female participant wrote that routine screening during urological work up was a bad idea (Table 2).

Table 1: Identity of the assailants

		Male ≤ 60	Male >60	Female ≤ 60	Female >60	Total
What is the identity of the assailant?	Parent	0	0	1	3	4
		0,0%	0,0%	6,2%	60,0%	12,9%
	Spouse	0	0	5	0	5
		0,0%	0,0%	31,2%	0,0%	16,1%
	Relative	1	2	6	0	9
		14,3%	66,7%	37,5%	0,0%	29,0%
	Stranger	6	1	4	2	13
		85,7%	33,3%	25,0%	40,0%	41,9%
	Total	7	3	16	5	31
		100,0%	100,0%	100,0%	100,0%	100,0%

Table 2: Opinion about standard screening for sexual abuse during routine urological care

		Male ≤ 60	Male >60	Female ≤ 60	Female >60	Total
What is your opinion about standard screening for sexual abuse during routine urological care?	Good idea	5	3	12	3	23
		71,4%	75,0%	75,0%	60,0%	71,9%
	Bad idea	0	0	0	1	1
		0,0%	0,0%	0,0%	20,0%	3,1%
	No opinion	1	0	3	1	5
		14,3%	0,0%	18,8%	20,0%	15,6%
	Missing	1	1	1	0	3
		14,3%	25,0%	6,2%	0,0%	9,4%
	Total	7	4	16	5	32
		100,0%	100,0%	100,0%	100,0%	100,0%

Discussion

This is the first report about the prevalence of a history of SA among males and females attending a general urologic outpatient clinic. The self-reported prevalence rate of SA by females visiting our urologic clinic (13.0%) corresponds to the data in other specific Dutch female populations (11-24%)¹²⁻¹⁶. See also Table 3. The prevalence of a history of SA (2.1%) in our male respondents is lower than reported in international literature (8-10%), but comparable to a Dutch prevalence rate of approximately 4%^{1,15,17}. Male patients in urological outpatient clinics are relatively old. It may be possible that they don't want to bring up their history of SA because of embarrassment due to the values of an earlier era. In addition, memory loss about events that happened a long time ago may play a role. Another reason can be that SA history is not recognised as being SA history. In a study by Holmes et al. 35% of the surveyed men did not self-define abusive childhood sexual experiences to be childhood sexual abuse¹⁸. According to MacMillan and co-workers there is a greater willingness in males and females under 60 years to report SA compared to people older than 60¹⁹. Also in our study there seems to be a greater willingness in males and females under 60 years to report SA compared to older respondents. If there was an accompanying partner, older male respondents may have been reluctant to bring up SA, because they never had discussed this with their partner. The same holds for the questionnaire. Although we created an anonymous setting, we noticed that some participants completed it in the presence of their partner. We also observed two partners reading the questionnaire aloud to the visually impaired respondent. One author even noticed a partner,

who wrote the answers of the respondent without asking for his opinions. Undoubtedly these observations distorted our study. Seventy percent of Dutch female patients are willing to fill in a questionnaire about possible SA at their first visit to a urologist and nearly 70% of the Dutch urologist asks their female patients for a history of SA, but how many urologists ask males for SA is unknown¹⁰. We suppose that urologists seldom ask their male patients for SA, but we have no data to support this hypothesis. While the prevalence of SA is low, one can argue that standard screening for SA is not necessary in male urological patients. However, this study shows that 70% of the urological patients with a history of SA support the idea to screen for it. SA victims report a lifetime history of multiple exposures to various trauma and higher levels of mental illness symptoms²⁰. Sexual violence is associated with lower rates of participation in cervical cancer screening and increased risk of posttraumatic stress disorder and depression²¹⁻²⁴. However, it is unknown if patients with a history of SA tend to avoid urological examinations including cystoscopy. We think it is commendable to screen for SA before urological examinations. The importance of discussing SA before performing a gynaecological examination is clear. Survivors of SA rate the gynaecologic care experience more negatively than the controls, experience more intensely negative feelings, and report being more uncomfortable during almost every stage of the gynaecological examination than controls²⁵. Survivors also report more traumatic responses during the gynaecological examination, including overwhelming emotions, intrusive or unwanted thoughts, memories, body memories, and feelings of detachment from their bodies²⁶⁻²⁹. In the study of Robohm et al., 82% of the survivors had never been asked about a history of SA or assault by the gynaecologic care provider²⁵. In our study only one of the 24 respondents was asked about a history of SA. How forthcoming patients are about their medical, sexual, and SA history may strongly be influenced by the level of comfort created by the physician taking the history. Discussing a history of SA or sexual assault with a patient can be very difficult³⁰. One of the major problems in studies on SA is the lack of agreement on the definition and description of SA, like child abuse, rape, or intimate partner abuse. Child abuse can be defined as any activity with a child before the age of legal consent for the sexual gratification of an adult or a substantially older child³¹. These activities include oral-genital, genital-genital, genital-rectal, hand-genital, hand-rectal, or hand-breast contact; exposure of sexual anatomy; forced viewing of sexual anatomy; and showing pornography to a child or using a child in the production of pornography. A meta-analysis shows that a history of SA is associated with lifetime diagnosis of multiple disorders, like seizures, gastrointestinal problems and non-specific chronic pelvic pain³². Another recent meta-analysis demonstrates that SA is associated with multiple psychiatric problems, including lifetime diagnosis of anxiety disorders, depression, eating disorders, PTSD, sleep disorders, and attempted suicide³³. Voiding complaints like frequency, urinary incontinence and dysuria are also associated with SA, but a review on this topic is not available³⁻⁹. No literature is available about the perception of SA-victims with regard to urological examinations. It is reasonable to argue that genital and rectal exam or urethrocytoscopy can be more traumatic

to patients with a history of SA than to those without. However, further research is needed to examine the impact of SA on the patient's perception of urologic examinations. Our findings support the recommendation that urologists should routinely screen for the possibility of SA. By addressing the issue, treatment of the urological disorder may improve with an understanding of underlying psychological issues stemming from the abuse. Victims of SA would also benefit as screening would afford an opportunity to disclose abuse to a trusted medical professional, resulting in a referral for therapy if needed.

Conclusions

The prevalence of SA in patients seeking urological care in the Netherlands is 2.1% for males and 13.0% for females. 15% of the respondents with SA had it disclosed to their urologist. Only one patient with SA was asked for it by urologist. More than 70% of the sexually abused respondents supported the idea to screen for SA in urological practice. Almost 42% report a stranger as assailant. In nearly ninety percent the SA took place before adulthood: 56.2% in childhood and 31.2% in adolescence.

Table 3: Prevalence of sexual abuse among females in The Netherlands

Authors	Dutch research population	Sexual abused number	Total number	Prevalence	Year of publication
Draijer et al. ¹²	Females 20-40 years	248	1054	23.5%	1990
Lankveld et al. ¹³	Non-oncologic gynecological patients	50	325	15.4%	1996
Van der Hulst et al. ¹⁴	pregnant women (non-clinical) without co morbidity	70	625	11.2%	2006
Lamers-Winkelman ¹⁵	11-18 years old students	108 *	989 *	10.9% *	2007
Beck et al. ¹⁶	Female patients attending an university pelvic floor center	42	185	22.7%	2009
This report	Female urological patients	21	161	13.0%	2011

*7,9% (146/1845) for 872 boys and 989 girls combined. This survey mentions a three to four time higher prevalence among girls, but no gender specific data is given. Recalculation of a 3 times higher prevalence for 108 out of 989 girls versus 36 out of 872 boys gives an estimated prevalence of 10,9% for girls only.

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PART III:**UROLOGICAL AND PELVIC FLOOR COMPLAINTS
AFTER SEXUAL ABUSE**

Chapter 5:

Multiple pelvic floor complaints are correlated with sexual abuse history

Based on:

Beck JJH, Elzevier HW, Pelger RCM, Putter H, Voorham-van der Zalm PJ. *Multiple pelvic floor complaints are correlated with sexual abuse history*. J Sex Med. 2009 Jan;6(1):193-8.

Abstract

Introduction: The relationship between sexual abuse and urinary tract symptoms, sexual abuse and gastrointestinal symptoms, or sexual abuse and sexual dysfunction has been described before. A correlation between all these symptoms and sexual abuse has not yet been reported.

Aims: The first aim of this study was to document the prevalence rates of reported sexual abuse in a large sample of female patients with complaints of the pelvic floor. The second aim was to evaluate the frequency of complaints in the different domains of the pelvic floor, such as complaints of micturition, defecation, and sexual function, in female patients reporting sexual abuse, and comparing these data with female patients without a history of sexual abuse.

Methods: Female patients with pelvic floor complaints were evaluated in a tertiary referral center. History taking was assessed by a pelvic-floor clinician. The number of domains with complaints of patients with a history of sexual abuse was compared with the number of domains with complaints of patients without sexual abuse.

Main Outcome Measures: The number of patients who reported sexual abuse and the frequency of complaints in the different domains of the pelvic floor. The number of domains of patients with a history of sexual abuse was compared with patients without a history of sexual abuse.

Results: Twenty-three percent (42/185) of the patients reported a history of sexual abuse. The female patients with a history of sexual abuse had significantly more complaints in three domains of the pelvic floor (35/42) compared with the nonabused (69/143) (83% vs. 48%, $p < 0.001$).

Conclusions: Twenty-three percent of the female patients in a pelvic floor center evaluated by a pelvic-floor clinician reported a history of sexual abuse. This is comparable with the percentage of sexual abuse observed in the population at large. In our sample, the patients with multiple pelvic floor complaints (micturition, defecation, and sexual function) related to pelvic floor dysfunction were more likely to have a history of sexual abuse than the patients with isolated complaints.

Introduction

International estimates of the prevalence of sexual abuse are high. In a review from Kellogg and the Committee on Child Abuse and Neglect in 2005 is suggested that each year approximately 1% of children experience some form of sexual abuse, resulting in the sexual victimization of 12% to 25% of girls and 8% to 10% of boys by 18 years of age¹. Results of a national telephone survey conducted in 2001-2003 in the U.S.A. indicate that 1 in 59 U.S.A. adults (2.7 million women and 978,000 men) experienced unwanted sexual activity in the 12 months preceding the survey and that 1 in 15 U.S.A. adults (11.7 million women and 2.1 million men) have been forced to have sex during their lifetime². The relationship between sexual abuse and urinary tract symptoms, sexual abuse and gastro-intestinal symptoms or sexual abuse and sexual dysfunction has been described in many articles, but it has not been quantified statistically³⁻¹¹. The pelvic floor controls isolated and integrated functions, sustains proper anatomic relationships between pelvic visceral organs and its outlets, and shares the basic mechanism with various visceral organs that control their function. The pelvic floor, consisting of muscular and fascial components, is the binding element between these organs. It is also considered to be an influential factor in dysfunction and subsequently behavior of the genital system in both men and women¹². However, literature is scarce on the topic of the diagnostic investigation of pelvic floor and there is a lack of uniformity in the description of the anatomy per se and the nomenclature of the pelvic floor¹³⁻¹⁵. A relationship between the complaints of micturition, defecation and sexual dysfunction related to the pelvic floor dysfunction and a history of sexual abuse has been suspected, but has not been previously examined or reported upon to date. The first aim of this study was to document the prevalence rates of reported sexual abuse in a large sample of female patients with complaints of the pelvic floor. The second aim was to evaluate the frequency of complaints in the different domains of the pelvic floor, such as complaints of micturition, defecation and sexual function in female patients reporting sexual abuse and comparing these data with female patients without a history of sexual abuse. Our hypothesis was that patients referred to a tertiary center with complaints of micturition, defecation and/or sexual dysfunction related to the pelvic floor dysfunction are more likely to have of a history of sexual abuse than women with complaints in fewer domains of the pelvic floor.

Methods

All female patients referred between January 2004 and November 2007 by urologists, gynaecologists, surgeons or gastroenterologists to our out patient pelvic floor center for pelvic floor evaluation due to complaints of micturition, defecation and /or sexual dysfunction possibly related to pelvic floor dysfunction were included. The pelvic floor clinician assessed the medical history of the patient. This consisted of a pelvic floor questionnaire in which different domains of the pelvic floor (micturition, defecation and sexual function) were structurally evaluated. The Pelvic Floor Inventories Leiden (PelFIs), a validated questionnaire, was used¹⁶. At the start of the development

of the PelFIs, the type of sexual abuse was not specified, only a history of sexual abuse was recorded. Later on the PelFIs was improved addressing the nature of sexual abuse: incest, sexual intimidation, rape, marital rape, sexual harassment, including forcible fondling, or not (otherwise) specified. The PelFIs is validated in Dutch and English¹⁷. A retrospective search was performed to evaluate if the referring physician has documented the type of sexual abuse in the patient's medical record. For the analysis patients were divided in two groups: patients with a history of sexual abuse (Group I) and patients without a history of sexual abuse (Group II). If a patient had at least one of the following complaints related to the different domains of the pelvic floor we defined her as positive for that domain. The domains are the urological domain, gastro-intestinal domain and sexual domain (Table 1). The data were analysed using SPSS version 14. Differences in frequencies were evaluated using Pearson's chi-square test or Fisher's exact test when cells with less than 5 expected subjects were present. A two-sided p-value <0.05 was considered statistically significant.

Results

A total of 185 female patients were retrospectively included and evaluated by a pelvic floor physiotherapist. No patients were excluded. The mean age of the population was 47.1 yr (SD 15.5 yr). Twenty-three percent of the patients (42/185) reported a history of sexual abuse. In the total group of patients the mean age of the sexually abused patients (Group I) was not significantly different from the not sexually abused patients (Group II) (43.7 vs 48.1 ; $p = 0.106$). The type and frequency of sexual abuse are listed in Table 2. The type of abuse could not be determined in 23.8% of the abused patients (10/42). Questions regarding sexual abuse were added in a follow up version of the PelFIs. In an earlier version sexual abuse was not specified by the patient, pelvic floor clinician or documented in the patients' medical record by the referring physician. In the sexually abused group 7.2% (3/42) of the patients had complaints in one domain of the pelvic floor versus 17.5% (25/143) in the non-abused group. Differences in two and three domains are 9.5% (4/42) in the abused group versus 34.2% (49/143) in the non-abused-group and 83.3% versus 48.3% (69/143) respectively. ($p < 0.001$) (Table 3).

Discussion

A sexual abuse prevalence of 23% at our outpatient academic pelvic floor center is comparable to earlier published data, in which a prevalence of 4%-38% has been described^{3,18-24}. Kellogg reported a sexual abuse prevalence of 12%-25%¹. In a prevalence study in a gynecologic outpatient clinic of a large urban teaching hospital Peschers reported that one fifth of the patients (20.1%) had been forced to engage in sexual activities²¹. Many studies have shown that sexual abuse might lead to a variety of symptoms in one domain of the pelvic floor^{3-6,9-11;17,21,22;24-29}. To our knowledge, this is the first publication about the relationship of complaints of micturition, defecation and sexual dysfunction related to the pelvic floor dysfunction and a history of sexual abuse. Our study

demonstrated a significantly higher rate of sexually abused women with complaints in the three domains of the pelvic floor compared to women with complaints in fewer domains. One of the limitations of this study is that we only included dyspareunia as a sexual dysfunction issue. In 2005 the Pelvic Floor Clinical Assessment Group of the International Continence Society described the domains of the pelvic floor including also pelvic pain and pelvic organ prolaps³⁰. Our study was started in 2004, so we did not include pelvic pain and a more specific definition of sexual dysfunction. Nor did we specify the type of sexual behavior that occurred during the abuse in genital penetration versus touch or forced oral sex. Another limitation of our study is that our sample is self selected. Therefore more patients with complaints of micturition, defecation and/or sexual dysfunction related to the pelvic floor dysfunction can be found in our research population. We believe that if this study would be performed in a urological, gynaecological, gastroenterological or surgical outpatient office, the difference may be even more significant, because the probability of selection is much lower. The fact that only 28 out of 185 of the women had only a single complaint could indicate that having only a single complaint is rare. We believe that this is the result of a selection bias, because referrers think of a pelvic floor dysfunction sooner in patients with multiple pelvic floor complaints. Another limitation is that instead of studying two large cohorts, one of sexual abused women and non abused controls, and then looking at pelvic floor domains, we used two groups which are already a pathological sample; women who went to a pelvic floor clinic with at least one pelvic floor problem. There is no real control group since both groups have already pathology. Women forced to engage in oral sex with a perpetrator may have very different sexual problems compared to women who had forced intercourse. Additionally, a sexual abuse experience that includes fondling is very different from a sexual abuse that includes intercourse and can have a different impact for the functioning of the pelvic floor. So, analyzing sexual abuse as a homogenous experience, can influence the outcome of the study. The importance of discussing abuse before performing a gynaecological examination is clear. Survivors of sexual abuse rated the gynaecological care experience more negatively than the controls, experienced more intensely negative feelings, and reported being more uncomfortable during almost every stage of the gynaecological examination than the controls. Survivors also reported more trauma-like responses during the gynaecological examination, including overwhelming emotions, intrusive or unwanted thoughts, memories, body memories, and feelings of detachment from their bodies³¹⁻³⁵. Physicians should also consider that any kind of gynaecological examination in these women may trigger a flashback of the primary situation and retraumatize the concerned women³⁶. Farley demonstrated a decreased probability of screening for cervical cancer at women who have been sexually abused, indicating that women who have been sexually abused tend to avoid routine gynaecological care³⁷. The clinical significance of the findings in this study suggests that a holistic view is needed in the treatment of pelvic floor dysfunction treatment and all domains need to be assessed in a questionnaire as early as possible during history taking, as was already described by Devroede³⁸. A hypothesis for

complaints in more domains in the abused group could be that they are related to a general pelvic floor disorder. This disorder is probably related to a overactive rest tone of the pelvic floor¹⁵. For example, Leroi reported that patients with a history of sexual abuse have a significantly more disturbed anorectal motility and a increased resting pressure at the lower part of the anal canal compared to non-abused patients with anismus⁷. The pelvic floor comprises several layers: from superficial to deep, the supportive connective tissue of the endopelvic fascia, the pelvic diaphragm (levator ani and coccygeus muscle), the perineal membrane (urogenital diaphragm) and the superficial layer (bulbospongiosus, ischiocavernosus and superficial transverse perineal muscles)^{12; 39}. The iliococcygeus, pubococcygeus and puborectal muscles make up the levator ani muscle and play an important role in prevention of pelvic organ prolapse and incontinence. The perineal membrane is a fibrous muscular layer directly below the pelvic diaphragm. The current concept is that the muscular contents of this layer are formed by the distal part of the external urethral sphincter muscle (compressor urethra and urethrovaginalis part of the external urethral sphincter). The bulbospongiosus and ischiocavernosus muscles of the superficial layer also have a role in sexual function while the superficial transverse perineal muscle has a supportive role. Pelvic floor muscle contraction presumably involves contraction of these muscles groups⁴⁰⁻⁴². We conclude that sexual abuse survivors may have a dysfunction of the above mentioned muscles, giving rise to urological complaints, gastro-intestinal complaints and/ or sexual dysfunction.

Conclusions

Twenty-three percent of the female patients in a pelvic floor center reported a history of sexual abuse. In our sample, patients with multiple pelvic floor complaints related to pelvic floor dysfunction are more likely to have a history of sexual abuse than patients with isolated complaints. Further research is needed to assess the impact of pelvic floor dysfunction and sexual abuse in relation to complaints of micturition, defecation and/or sexual dysfunction.

Table 1: Specifications of complaints in the three domains of the questionnaire

Urological Domain	Gastro-intestinal Domain	Sexual Domain
Urgency / frequency	Frequency	Dyspareunia
Hesitation	Blood loss	
Weak urinary stream	Inappropriate emptying	
Intermittent urinary stream	Defecation in tempi	
Straining when urinating	Straining	
Residual awareness	Peri-anal skin complaints	
Urinary tract infections	Soiling	
Painful voiding	Incontinence of stool or flatus	
	Peri-anal pruritus	
	Painful emptying	

Table 2: Frequency and percentage of reported sexual abuse

Type of abuse	n	%
Incest	11	26.2
Sexual intimidation	4	9.5
Rape	3	7.2
Marital rape	9	21.4
Sexual harassment	5	11.9
Unknown	10	23.8
Total	42	100

Tabel 3: Number of domains with complaints for patients with or without sexual abuse.

Domains	Group I: Abused +	Group II: Abused -	n	p-value
1	3 (7.2%)	25 (17.5%)	28 (15.1%)	
2	4 (9.5%)	49 (34.2%)	53 (28.7%)	
3	35 (83.3%)	69 (48.3%)	104 (56.2%)	
Total	42 (100%)	143 (100%)	185 (100%)	<0.001

Domains: number of domains of the pelvic floor with complaints

Abused +: number of patients with a history of sexual abuse

Abused -: number of patients without a history of sexual abuse

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Chapter 6:

Sexual abuse and pelvic floor complaints: a case-control study to identify which pelvic floor complaints are related to sexual abuse using the PeLFIs (a validated pelvic floor questionnaire)

Beck JJH*, Nicolai MP*, Berzuk K, Putter H, Pelger RCM, Elzevier HW, Voorham-van der Zalm PJ. *Sexual abuse and pelvic floor complaints: a case-control study to identify which pelvic floor complaints are related to sexual abuse using the PeLFIs (a validated pelvic floor questionnaire)*. Submitted * shared first authorship

Abstract

Introduction: Sexual abuse (SA) is present in about a quarter of female patients presenting with complaints of micturition, defecation and/or sexual function. The pelvic floor plays an important role in the aetiology of these complaints.

Aim: To find out which complaints from the domains of the pelvic floor are correlated with SA.

Methods: A case-control study in which an administered validated questionnaire the Pelvic floor Inventories (PeLFIs) was used to evaluate 55 patients with pelvic floor dysfunction (PFD) and 50 controls in a tertiary referral center in Canada. Complaints of the pelvic floor of patients with and without SA were compared.

Main Outcome Measures: The survey results.

Results: Patients with pelvic floor complaints showed a significantly higher percentage of SA (22%) compared to the control group (2.1%) ($p=0.008$). In the PFD group a history of SA correlated significantly with complaints of constipation ($p<0.01$), sexual dysfunction ($p<0.01$) and urgency/frequency ($p<0.01$).

Conclusion: In a pelvic floor population, constipation and/or sexual dysfunction and/or urgency/frequency are significantly correlated with SA.

Introduction

Meta-analysis show negative effects of (childhood) sexual abuse (SA) on psychological and physical wellbeing. A meta-analysis shows that a history of SA is associated with lifetime diagnosis of multiple disorders, like seizures, gastrointestinal (GI) problems and non-specific chronic pelvic pain¹. Another meta-analysis demonstrates that SA is associated with multiple psychiatric problems, including lifetime diagnosis of anxiety disorders, depression, eating disorders, post-traumatic stress disorder (PTSD), sleep disorders and attempted suicide². Studies have shown the relationship between SA and complaints of micturition, defecation, and/or sexual functioning³⁻⁷. The pelvic floor plays an important role in the prevention of these complaints⁸⁻¹¹. If the pelvic floor is no longer capable of maintaining one of these functions, this is referred as a pelvic floor dysfunction (PFD). According to large population-based surveys, the prevalence rate of SA in western society ranges from 12 to 25% in women and from 8 to 10% in men^{6,12,13}. These estimates of the prevalence of SA in the population differ widely due to the use of varying definitions (e.g. childhood sexual abuse versus lifetime, unwanted versus forced) and methodology (e.g. interview- versus questionnaire-versus informant studies). In our university pelvic floor center, 23% of the women reported a history of SA¹⁴. We also discovered that synchronic complaints in multiple domains of the pelvic floor are correlated with SA¹⁴. The aim of this study is to find out what complaints from the domains of the pelvic floor are correlated with SA. Furthermore we wondered what percentage of a sample of patients with pelvic floor dysfunction has a history of sexual abuse.

Methods

A case-control study was chosen to compare patients with PFD with controls. Participants were consecutively selected for inclusion at an Incontinence and Pelvic Pain Clinic (IPPC). At the IPPC, all women eligible for pelvic floor physiotherapy were considered for the patient group, regardless of the domain in which they experienced symptoms. Before inclusion, patients with pathology other than complaints related to PFD were excluded. Healthy volunteers, without a treatment-wish for the above mentioned pelvic floor-related symptoms and without medication for PFD were considered eligible for inclusion in the control group. These volunteers, visiting the practice for other reasons, were recruited through written advertisement and by word of mouth. The women in the patient group were informed about the study by a pelvic floor physiotherapist and were asked to participate. This study was carried out using the Pelvic Floor Inventories Leiden (PeLFIs) for women, a 149-item questionnaire which has been validated in Dutch and English^{15,16}. It is an administered questionnaire, used to obtain accurate information about the different domains of the pelvic floor. The questions are relating to the domains of: general health, prolapse, lower urinary tract symptoms (LUTS), defecation, obstetric information, pelvic floor pain and sexual function. One question in the sexual function-domain is about SA. During the validation of the PeLFIs in English, it was distributed to 55 women with complaints of prolapse, bladder, bowel dysfunction, sexual function and/or pelvic floor pain and to 49 healthy volunteers in Canada. All participants provided

written informed consent. Approval of this study was obtained by the University of Manitoba, Canada. Data analysis was performed using SPSS release 18 (SPSS Inc., Chicago, IL, USA). Frequencies were used to estimate the prevalence of sexual abuse and to examine the types of abuse. Means of numerical demographic values were compared with the independent T-test. Bivariate associations between the groups and the type of answers were calculated using the Pearson chi-square procedure. We assessed correlation with all types of abuse and the different domains of the pelvic floor, using Pearson's correlations. Two-sided p values <0.05 were considered statistically significant.

Results

A total of 105 women completed the PeLFIs of whom 55 were patients known with complaints due to a PFD and 50 controls. The mean age of patients was 54.3 (SD 15.32) this was perfectly comparable with the control group, which had a mean age of 54.0 (SD 15.33). The body mass index (BMI) did not differ significantly between the case and control group. In the patient group the use of medication was statistically higher than in the control group 80.0% and 63.3% respectively ($p=0.05$), yet there were no significant difference in the use of anti-depressants between the two groups (Table 1). The prevalence of abuse (sexual, physical or mental) in the patient group is 25.5%, which is significantly higher than the 2.0% prevalence in the control group ($p=0.002$). Equally, the patient group showed a significantly higher percentage of SA compared to the control group, 22% versus 2.1% ($p=0.008$). Because it was possible to mark multiple answers, the majority of the abuse victims (64.3%, $n=9$) reported to have experienced more than one type of abuse. Two patients even noted to have experienced all the types of abuse mentioned in the questionnaire. The reported types of abuse are listed in Table 2. Of the patients that reported to have experienced a form of abuse, 53.3% stated to have received help to deal with it. In fact 85.7% of them confirmed to have been able to deal with their experience(s). However, 50% of the patients with an abuse history stated that they would like to receive help to deal with their past. Because we hypothesized that sexual abuse would have more impact on PFD than physical- or mental abuse, we analyzed the correlation with the different domains of the pelvic floor for all the types of abuse separately. The domain constipation correlated significantly with SA in all its forms (mean $r=0.28$, $p<0.01$), there was no correlation between constipation and physical violence or mental cruelty. In the same way, the domain about sexual dysfunction correlated with SA ($r=0.32$, $p<0.01$), and not with physical- or mental abuse (Table 3). Within the domain obstructive micturition (urgency/frequency), the questions 'do you feel urge to urinate when you hear water running?' and 'do you feel the urge to urinate when you are in the shower' correlated significantly with a history of SA ($p=0.008$ and $p=0.005$ respectively).

Table 1: Demographics

n(%)	Patient n=55 (± SD)	Control n=50 (± SD)	Significance 2-tailed
Age (mean)	54.3 (±15.32)	54.0 (±15.33)	0.936
BMI (mean)	26.4 (±4.95)	24.6 (± 2.86)	0.167
Use of medication (not specified)	44 (81.5)	31 (64.6)	0.054
Antidepressants	0	1 (4)	0.213

Table 2: Prevalence different types of abuse

	Patient n=55 n (%)	Control n=50 n (%)
Do you have negative experiences in the past involving abuse or mistreatment?	14 (25.5)	1 (2)
Type of abuse	Patient n= 50 n (%)	Control n=47 n (%)
Incest	6 (12)	0
Rape	5 (10)	0
Sexual intimidation	6 (12)	1 (2,1)
Marital rape	2 (4)	0
Sexual harassment	5 (10)	1 (2,1)
Sexual abuse (total)	11 (22.0)	1 (2,1)
Physical violence	5 (10)	0

Table 3: Correlation of PFD domains and sexual abuse

Domains	Spearman's rho	Significance (two-tailed)
Prolaps	-0.006	0.958
Micturition	0.167	0.118
Urinary incontinence	0.262*	0.013
Obstructive micturition	-0.044	0.682
Defecation	0.070	0.512
Fecal incontinence	0.179	0.093
Constipation	0.194	0.068
Pelvic floor pain	0.054	0.614
Sexual dysfunction	0.312*	0.003

* correlation is statistically significant

Discussion

This study is the first case-control study to evaluate SA and SA-related complaints in a Canadian population with patients referred to a tertiary clinic to be treated for their complaints related to pelvic floor dysfunction. The prevalence of SA in the case group was 22% versus 2% in the control group ($p < 0.05$). In a Dutch outpatient population of female patients referred for academic pelvic floor physiotherapy, the prevalence of SA was 23%¹⁴. So the prevalence in this Canadian PFD group is comparable to another PFD population. In urology practice SA was seen in 13% of the female patients¹⁷. In the gynaecology practice, SA is seen in 15-20% of the patients. In patients with functional gastroenterological complaints these numbers are even higher with 30-56%¹⁸⁻²². Equally important are the sexual dysfunctions, which are associated with SA experience in 21 up to 95% of the patients²³⁻²⁵. Chronic pelvic pain is highly correlated to SA as well (up to 55%)²⁶. We made use of a validated questionnaire (PeLFIs) which has been proven to be a reliable instrument in obtaining information about abuse²⁷. Confounding is a limitation in all case-control studies. As with all case-control studies we measured a retrospective exposure (SA), although the exposure is random in the cases. Use of medications can be a confounder. Several medications can have an influence on symptoms of the bladder, bowel or pain perception. It is possibly that because controls with medication of symptoms of the pelvic floor were excluded, the PFD group significantly used more medications ($p = 0.05$). Age and BMI are comparable, and the controls are acquired in the same population as the cases (patients visiting IPCC for other

reasons). So these are no confounders. Because of the extremely low prevalence of SA in the control group (2%), we assume a selection-bias. It is possible that controls with SA avoid a voluntarily inquiry about complaints related to SA, or were excluded because of the use of pelvic floor symptom related medication. The numbers used in both groups were sufficient to reach statistical power. However, correlations between 0.25 and 0.50 indicate that the strength of the correlation is weak to moderate, even though the existence of the correlation has proven to be statistically significant. The pelvic floor comprises several layers, including the pelvic diaphragm (levator ani and coccygeus muscles) and the urogenital diaphragm. Each diaphragm has its own 3D shape and position with regard to the internal pelvic organs. The urogenital diaphragm consists of a deep layer, the perineal membrane, and a superficial layer, consisting of the bulbospongiosus muscle and the ischiocavernosus muscle. The levator ani muscle is made up of the iliococcygeus, pubococcygeus, and puborectalis muscles. Together with the urethral and anal sphincters, these muscles play an important role in preventing complaints of micturition, defecation, sexual dysfunction, prolapse and/or pelvic floor pain. The development of one of these complaints is referred to PFD^{11,28-32}. When explaining urological symptoms correlated to SA, it has been hypothesized that patients with PFD have voiding difficulties due to a higher tone at rest of the pelvic floor^{11,33,34}. Many of them have episodes of obstructive urinating complaints. As in benign prostatic hyperplasia (BPH), long-lasting bladder outlet obstruction (BOO) can lead to overactive bladder symptoms³⁵. Overactive bladder (OAB, urgency syndrome) is defined as: urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection (UTI) or other obvious pathology³³. Obstruction-induced changes in the bladder are of two basic types. First, the changes that lead to detrusor instability or decreased compliance are clinically associated with symptoms of frequency and urgency. Second, the changes associated with decreased detrusor contractility are associated with further deterioration in the force of the urinary stream, hesitancy, intermittency, increased residual urine, and (in a minority of cases) detrusor failure³⁶. Pelvic floor physiotherapy can be used to treat pelvic floor related BOO and OAB symptoms³⁷. In this study cases with SA have significantly more complaints of urgency and frequency. When confronted with a patient reporting a SA history, while dealing with PFD and OAB, a purely symptomatic treatment of the complaints may not be sufficient to help the patient. In a randomised trial in anxious, depressed and phobic patients psychotherapy reduced complaints of OAB (urgency, incontinence and nocturia) significantly better than bladder drill or pharmacotherapy³⁸. This suggests that psychopathology itself has an influence on the bladder or pelvic floor or both. This suggestion is proven in sexual-abuse-related gastro-intestinales complaints. Douglas Drossman, an expert in sexual-abuse-related gastro-intestinales complaints, wrote an extended review explaining the influence of SA and post-traumatic stress disorder on GI-related complaints. In summary: although abuse history may be present across all diagnostic categories, more severe abuse seems to occur in patients with functional GI disorders. The pathophysiological

features that explain this association relate to stress-mediated brain-gut dysfunction and can range from altered stress-induced mucosal immune function to impaired ability of the central nervous system to downregulate incoming visceral or somatic afferent signals³⁹. In this context one can assume that in this group of patients pelvic floor physiotherapy will not alter complaints constipation, but successful effect of pelvic floor physiotherapy with biofeedback included in patients with SA and constipation is reported⁴⁰. This in contrast to surgery of the colon, which in patients with a history of SA and slow-transit constipation, seems to be less successful⁴¹. Drossman postulates a biopsychosocial treatment approach to better treat GI related complaints after PTSD and/or SA. The relation between sexual dysfunction after SA is best analysed is the Boston Area Community Health (BACH) Survey. It's a community-based epidemiologic study of urologic and sexual symptoms and risk factors in a racially/ ethnically diverse random sample of women aged 30–79 (n=3,205 women). Although abuse history was not significantly associated with likelihood of sexual activity. In this large sample, SA was significantly and positively associated with sexual dysfunction after adjusting for covariates (including depression). Analyses of the six FSD domains showed that the relationships were strongest for pain and satisfaction⁴². In a sample of 150 women with dyspareunia Leclerc and co-workers found a significant relation with SA and dyspareunia and a relation with SA and sexual dysfunction⁷. These are good explanations why in our PFD sample sexual dysfunction is significantly correlated with SA. In a large meta analysis, SA is correlated to pelvic pain with an odds ratio of 2.75 (95% CI 1.73-4.30)¹. In our results this correlation was not reproduced. The above mentioned confounding or bias can be an explanation for the lack of correlation. With this study we confirm that sexual abuse is an important factor in the development of various complaints related to PFD. We are convinced that inquiring about sexual abuse should be routine in the history taken by health care providers, especially when patients present with complaints related to PFD and before physical examination is performed or treatment starts. When a history of sexual abuse is confirmed, more targeted therapies may have to be used. A combination of pelvic floor physiotherapy and psychological treatment may be necessary in addition to better treat PFD after SA. A randomised clinical trial in patients with PFD and SA comparing pelvic floor physiotherapy alone versus pelvic floor physiotherapy with psychological treatment should be performed to further explore this topic.

Conclusion

Based on our case-control study we conclude that female patients with complaints of pelvic floor dysfunction report significantly more often a history of SA compared to controls. In our sample, SA was significantly correlated with constipation, sexual dysfunction and urgency/frequency.

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Chapter 7:

Urological complaints and sexual abuse: a case control study identifying multiple urological complaints in relation to sexual abuse history

Based on:

Beck JJH, Nicolai MP, Putter H, Pelger RCM, Elzevier HW. *Urological complaints and sexual abuse: a case control study identifying multiple urological complaints in relation to sexual abuse history*. (Accepted Advances in Sexual Medicine)

Abstract

Introduction: The relationship between sexual abuse and urinary tract symptoms has been described for urgency, frequency and nocturia.

Aims: To investigate if other urological complaints in females, like urinary tract infections, incontinence, voiding complaints and lower abdominal pain are also correlated with a history of sexual abuse (SA) and to measure the prevalence of sexual abuse in our urological patient population, using a clinical case control study.

Methods: 1383 female patients of 18-years or older visiting our outpatient urological university clinic were asked to fill out a questionnaire evaluating referral indications and urological complaints. The questionnaire consisted out of two parts. The first was designed to collect data about demographic characteristics and medical history. The second part included referral indications, the urological complaints and a possible history of SA. The sample was divided into two groups: those with and those without a history of SA.

The Outcome Measures: I. The comparison of the frequency of voiding complaints, urinary tract infections (UTI's), lower abdominal pain, hematuria and incontinence in respondents with and without SA. II. The prevalence of SA in female patients presenting at our university urological outpatient clinic. III. The number of urological symptoms presented at the time of referral by respondents with a history of SA compared the non-abused.

Results: 436/1383 (32%) patients were willing to participate. 304 (70%) questionnaires were properly filled in. The reported prevalence of sexual abuse was 17% (51/304). More than half of the females with a history SA presented with voiding complaints (32/51 $p=0.18$), incontinence (31/51 $p=0.10$) and urinary tract infections (27/51 $p=0.22$). However, comparing the data of respondents without SA we found no significant differences with regards specific complaints. Patients with SA report more symptoms than those without (Armitage's trend test 0.14 ($p=0.004$) for 4 complaints or more).

Conclusions: No significant correlation between SA and voiding complaints, incontinence nor lower abdominal pain was found. The prevalence rate of SA in female patients visiting our university urological outpatient clinic was 17%. These abused females mentioned more synchronous complaints as reason for referral at their first visit than the non-abused.

Introduction

Sexual abuse (SA) is defined by International Society for the Prevention of Child Abuse and Neglect as "a social and medical problem in which a child under the age of consent is involved in an act resulting in sexual satisfaction of an adult or connivance of such an act"¹. The frequency with which children are exposed to sexual advances from adults varies according to the definition of abuse, the age range studied, and the methods of ascertainment. The prevalence of SA is estimated to be 12% to 25% for females and 8% to 10% for males². In 2007, for the first time in a large cohort study, SA was causally related with urinary urgency, frequency and nocturia for males and females, using the Hill-criteria (1965) for proving causality^{3,4}. Before and after this publication several investigators found an association between a history of SA and urological complaints^{3,5-13}. Voiding complaints, dysfunctional voiding, urgency and frequency were mentioned to be correlated with SA most frequently. Several studies found no relation with urinary tract infections^{6,14}. Recently we established a correlation between synchronic complaints in multiple domains of the pelvic floor and a history of SA¹⁵. In this study we compare female patients visiting a urological out patient clinic with and without a history of SA. We investigated if the abused patients report more or less voiding complaints, UTI's and lower abdominal pain than those without SA. In addition we established if the SA-prevalence in female patients visiting our out patient urological clinic was comparable to the percentage of 22.7% found in females visiting our university outpatient pelvic floor center¹⁵. Because we hypothesise that SA can lead to pelvic floor dysfunction (PFD) and PFD can give several synchronous urological symptoms, we wonder if patients with SA have more synchronous urological complaints.

Methods

Over a period of 2.5 years a consecutive series of 1383 new female patients of 18-years or older visiting our outpatient urological university clinic were asked to fill out a self-administered questionnaire evaluating referral indications and urological complaints (see Appendix). The construction of the database and the self-administered questionnaire were approved by the local Institutional Ethics Committee. It was conducted by the principle investigator (HWE, a urologist-sexologist) to evaluate female sexual dysfunction^{16,17}. All females received a letter explaining the objectives of the study and were kindly invited for collaboration. The self administered questionnaire consisted of two parts. The first collected data about demographic characteristics and medical history, the second part included referral indications, the urological complaints, sexual dysfunction and a possible history of SA. If relevant, patients were allowed to mention more than one reason for referral. A retrospective database study was performed to identify two groups: those with (cases) and those without a history of SA (controls). Comparisons between proportions were made using Pearson's chi-square test or Armitage's trend test; continuous variables were compared by student's

t-test and, where appropriate, analysis of variance (ANOVA). Differences were considered significant when the two-tailed p-value was <0.05 . Data analysis was carried out using SPSS for Windows version 16.0.1 (SPSS, Inc., Chicago, IL). The outcome measures were: I. The comparison of the frequency of voiding complaints, UTI's, lower abdominal pain, hematuria and incontinence in respondents with (cases) and without SA (controls). II The reported percentage of female patients presenting at our university urological outpatient clinic with a history of SA. III. The number of urological symptoms presented at the time of referral by respondents with a history of SA.

Results

After reading the letter explaining the objectives of the study 436/1383 patients (32%) were willing to participate. All 436 gave written informed consent, 304 (70%) questionnaires were properly filled in. I. More than half of the females with SA presented with voiding complaints (32/51, 63%, $p=0.18$), incontinence (31/51, 61%, $p=0.10$) and urinary tract infections (27/51, 53%, $p=0.22$). However, comparing the data of respondents without SA: voiding complaints (133/253, 53%), incontinence (122/253, 48%) and urinary tract infections (110/253, 44%) we found no significant differences with regard to specific complaints. Considering lower abdominal pain (20/51, 39%, $p=0.16$), hematuria (17/51, 33%, $p=0.13$) and colic pain (7/51, 14% $p=0.98$) we also found no significant differences between the two groups. See Table 1. II. Fifty-one respondents confirmed SA. This means that 17% (51/304) of the new female patients visiting our outpatient urological reported a history of SA. III. Using the Armitage's trend test (0.14, $p=0.004$) to compare the reported the total number of urological complaints as reason for referral to the urologist, shows that patients with SA significantly report more synchronous complaints as reason for referral. See Table 2.

Discussion

The 17% prevalence rate of SA in females visiting our urologic outpatient university clinic corresponds to the percentages found in other specific populations in the Netherlands (10,9% - 23,5%), meaning that this percentage of cases with SA is comparable with SA in other Dutch populations^{15,18-22}. The populations and prevalences are listed in Table 3. In a previous study we found out that in an inquiry before the first visit to the urologist, 70% of the patients with a history of SA disclosed it²³. The question asked in the questionnaire, "Did you have negative sexual experiences in the past" is of course not equal to "did you experiences sexual abuse in the past", but in the Dutch language it is considered to be similar. This is confirmed by the responses of patients: all patients admitted abuse, and 13 out of 14 patients described the type of negative sexual experience as sexual abuse²³. In this sample of patients, most with urological complaints, we found an association between a history of SA and urological complaints, namely a higher

percentage of voiding complaints, incontinence and urinary tract infections in the SA group compared to the controls, but the differences were not significant. Several authors found a relation between SA and urological complaints, some didn't. These studies are listed in Table 4. Despite the pre-existing urological complaints in both groups, patients with a history of SA reported significantly more synchronous urological complaints as reason for referral. Perhaps PFD is an explanation for the synchronous urological complaints. Davila et al reported significant more pelvic floor related urological complaints like dribbling, slow urinating stream and stress incontinence⁹. In the study from Link et al, in which a causal relation between sexual abuse and overactive bladder (OAB) was proven, a short review of the biological pathway was given³. They summarize that anxiety and behavioural responses to stress involve complex neural circuits and multiple neurochemical components. Acute and chronic stress due to abuse can alter these circuits, their neurochemical components, and bladder function^{24,25}. In animal models stress changes bladder histology and physiology²⁶⁻³⁰. Link et al also mention a role for corticotrophin-releasing factor (CRF), a primary neurotransmitter expressed by neurons within the central stress network³. CRF is expressed by neurons within the pontine micturition center and within regions in the spinal cord that form part of the micturition reflex pathway^{31,32}. This assumes that CRF influences bladder function. Besides the above mentioned biological pathways, in concordance with Davila's observation of pelvic floor related urological complaints, we hypothesise that pelvic floor dysfunction (PFD) is another link between SA history and voiding complaints. The pelvic floor is known to be an integrated structure, influenced by psychological and physical causes. A higher prevalence of synchronous multiple pelvic floor complaints, like micturition, defecation and sexual pain, are seen in patients with sexual abuse history³³. The pelvic floor comprises several layers, including the pelvic diaphragm (levator ani and coccygeus muscles) and the urogenital diaphragm. Each diaphragm has its own 3D shape and position with regard to the internal pelvic organs. The urogenital diaphragm consists of a deep layer, the perineal membrane, and a superficial layer, consisting of the bulbospongiosus muscle and the ischiocavernosus muscle. The levator ani muscle is made up of the iliococcygeus, pubococcygeus, and puborectalis muscles. Together with the urethral and anal sphincters, these muscles play an important role in preventing complaints of micturition, defecation, sexual dysfunction, prolapse and/or pelvic floor pain. The development of one of these complaints is referred to as PFD³⁴. It has been hypothesized that patients with PFD have voiding difficulties due to a higher tone at rest of the pelvic floor³⁵⁻³⁷. Many of them have episodes of obstructive urinating complaints. As in benign prostate hyperplasia, long-lasting bladder outlet obstruction (BOO) can lead to OAB symptoms³⁸. Obstruction-induced changes in the bladder are of two basic types. First, the changes that lead to detrusor instability or decreased compliance are clinically associated with symptoms of frequency and urgency. Second, the changes associated with decreased detrusor contractility are associated with further deterioration in the force of the urinary stream, hesitancy, intermittency, increased residual urine, and (in a minority of cases) detrusor failure³⁹. Pelvic floor

physiotherapy can be used to treat pelvic floor related BOO and thus relieving OAB symptoms⁴⁰. Unfortunately randomised studies describing improvement of urological complaints in SA survivors treated with pelvic floor physiotherapy are not available. Still, we are convinced that SA can lead to PFD (e.g. pelvic floor overactivity) resulting in BOO, resulting in voiding symptoms and later on in storage symptoms (OAB). This suggest that functional complaints as dysfunctional voiding, incontinence and urgency will be more often associated with a SA-history than complaints with a clear cut aetiology such as hematuria or colic pain. Our Pelvic Floor Research Group reported about the correlation between synchronic pelvic floor complaints in multiple domains of the pelvic floor and SA¹⁵. In that cohort several patients did not have any urological complaints, but had difficulties with defecation, sexual dysfunction and/or chronic pains; in other words not all patients with a history of SA necessarily have urological complaints. In this study one patient with SA was referred because of an abnormal finding on ultra sound or CT scan, but had no urological complaints. A recent study including 238 patients with micturition, defecation and/or sexual problems, showed that 72% had an elevated pelvic floor rest tone³⁶. As much as 56% of them had complaints in three domains of the pelvic floor. This also indicates that a history of SA can reveal itself in other, non-urological complaints. This study has several limitations. Confounding is a limitation in all case-control studies. As with all case-control studies we measured a retrospective exposure (SA), although the exposure is random in the cases and the controls are from the same base population. A possible confounding are underlying psychiatric diseases, which were not mentioned by the cases or controls or use of medications which are not mentioned. Some medications can mask certain urological complaints. A bias in this database is the definition of voiding complaints. The database and inclusion of patients was started before the publication of Link at al in 2007, in which urgency, frequency and nocturia were causally related to SA³. In our database urgency, frequency, nocturia and other voiding complaints are all grouped together. An attempt to redefine voiding complaints in the database by separating urgency, frequency and nocturia was not successful, because the type of voiding complaints was not specified in the questionnaire. This is the major bias of this study. Another bias is selection bias, because of a 32% response rate, is possible that a lot of patients with sexual abuse chose not to respond, what can alter the outcome, introducing a self selected sample. Those who responded may have been different from non-responders, making it difficult to generalize our findings to the entire Dutch female urological patient population. Because our prevalence of SA is comparable to other Dutch populations, as mentioned in Table 3, introduction of a self selected sample is less probable. Also, the use of a self-administered non-validated questionnaire is a limitation. There are several possible explanations for the low participation rate of 32%. A major part of the patients who were willing to participate may have been embarrassed by the content of the questionnaire. In addition, subjects had to be actively recruited by the urologists and residents. In practice, each new female patient had to be asked if she had received the letter explaining the objective of the study. While some females expressed themselves negatively with regards the

content of the study, the recruitment was not always adequately done by all the involved doctors. Undoubtedly, this has contributed to the relatively low participation rate. While they might be distracted, embarrassed, or feel compelled to complete it, we asked the participants to fill out the questionnaire at home and not during their appointment in the hospital. So, they were asked to return it by mail or to hand it over at the second visit. The latter again required a proactive attitude of the urologists and residents. This means that probably not all patients who had filled out the questionnaires were asked to deliver it properly. It would have been better to "overshoot" the number of distributed questionnaires to collect a larger sample. In our sample, twenty patients mentioned no urological complaints at all. They were referred because of abnormalities found on ultrasound imaging or CT-scan. One out of these twenty mentioned a history of SA. One of the major problems in studies on SA is the lack of agreement on the definition and description of SA, like child abuse, rape, or intimate partner abuse. Women forced to engage in oral sex with a perpetrator may have very different pelvic floor problems compared with women who had forced intercourse. Additionally, a sexual abuse experience that includes fondling is very different from a sexual abuse that includes intercourse, and can have a different impact for the functioning of the pelvic floor. So, analysing sexual abuse as a homogenous experience can influence the outcome of this study. Patients with SA reported more synchronous complaints as reason for referral than patients without SA. We think that PFD gives a range of urological complaints (voiding complaints and storage complaints), explaining the larger number of synchronous urological complaints per person in the SA-group. One may hypothesize that a large number of urological complaints per person in a female patient points to a higher chance of a history of SA. In our opinion urologist should always ask their patients for SA. By addressing the issue, treatment of the urological disorder may improve with understanding of underlying psychological en physical issues stemming from the abuse. Multiple complaints as reason for referral and pelvic floor dysfunction are indicative for a history with SA and should alert the urologist to ask for it.

Conclusions

No significant correlation between SA and voiding complaints, incontinence nor lower abdominal pain was found. The prevalence rate of SA in female patients visiting our university urological outpatient clinic was 17%. These abused females mentioned more synchronous complaints as reason for referral at their first visit than the non-abused.

Table 1: Reported complaints as reason for referral in the patients with SA compared to those without SA

Complaint	SA + (n=51)	%	SA – (n=253)	%	p
Voiding complaints	32	63%	133	53%	0.18
Incontinence	31	61%	122	48%	0.10
Urinary tract infections	27	53%	110	44%	0.22
Abdominal pain	20	39%	74	29%	0.16
Hematuria	17	33%	59	23%	0.13
Colic pain	7	14%	35	14%	0.98

SA+ = patients with sexual abuse history, SA- = patients without sexual abuse history, p = p-value

Table 2: Number of complaints reported as reason for referral to the urologist

Nr of complaints	SA+ (n)	SA+ (%)	SA- (n)	SA- (%)	Total (n)	Total (%)
0	1	2.0%	19	7.5%	20	6.6%
1	16	31.4%	75	29.6%	91	29.9%
2	11	21.5%	74	29.3%	85	28.0%
3	7	13.7%	46	18.2%	53	17.4%
4	8	15.7%	25	9.9%	33	10.9%
5	5	9.8%	12	4.7%	17	5.6%
6	3	5.9%	2	0.8%	5	1.6%
Total	51	100.0	253	100.0	304	100.0 %

SA + patients with sexual abuse, SA – patients without sexual abuse. This table shows that the patients with SA report more symptoms than those without (Armitage's trend test 0.14 (p=0.004) for 4 complaints or more).

Table 3: Prevalence of sexual abuse among females in The Netherlands

Authors	Dutch research population	Sexual abused number	Total number	Prevalence	Year of publication
Draijer et al. ¹⁸	Females 20-40 years	248	1054	23.5%	1990
Lankveld et al. ¹⁹	Non-oncologic gynecological patients	50	325	15.4%	1996
Van der Hulst et al. ²⁰	pregnant women (non-clinical) without co morbidity	70	625	11.2%	2006
Lamers-Winkelmann ²¹	11-18 years old students	108*	989*	10.9%*	2007
Beck et al. ¹⁵	Female patients attending an university pelvic floor center	42	185	22.7%	2009
Beck et al. ²²	Female patients attending a urological district hospital	21	161	13.0%	2011
Beck et al.	Female patients attending an university urology clinic	51	304	16.7%	This report

* 7,9% (146/1845) for 872 boys and 989 girls combined. This survey mentions a three to four time higher prevalence among girls, but no gender specific data is given. Recalculation of a 3 times higher prevalence for 108 out of 989 girls versus 36 out of 872 boys gives an estimated prevalence of 10,9% for girls only.

Table 4 :Investigated urological complaints in relation to sexual abuse history

Author	Year	Type of research	Research population	Nr of patients with sexual abuse	Investigated urological complaints in relation to sexual	Correlation with sexual abuse
Reinhart ¹⁴	1987	Longitudinal	Children suspected to be sexual abused	38 boys & 132 girls	Urinary tract infections	No
Reinhart ⁵	1989	Case reports	Children attending clinic	2 boys & 3 girls	dysuria, genital and urinary tract infections, voiding dysfunction, and genital trauma	Yes
Klevan ⁶	1990	Case control	Sexual abused children	68 boys & 360 girls	Urinary tract infections, Urinary frequency or dysuria in 20% of the abused children	UTI: no Frequency: possible Dysuria: possible
Elsworth ⁷	1995	Case reports	Sexually abused	12 children, 6 adults	Dysfunctional voiding	Yes
Von Heyden ¹¹	2001	Case report		1	Sacral Neuro modulation for Urinary Retention Caused by Sexual Abuse	
Fenster ⁸	1995	Case reports	4 sexual abused women with urine retention	4	Urinary retention	Yes
Davila ⁹	2003	Case control	Female members of sexual abuse survivor support groups and a control group of patients attending a general gynecology clinic	58 sexual abuse survivors and 51 controls	Stress urinary incontinence , urge urinary incontinence, slow stream, dribbling incontinence	Yes
Van Balken ¹²	2006	Longitudinal	Females tested for neuro modulation by tibial nerve stimulation	12 sexual abused out of 103	Sexual abuse did not alter outcome of tibial nerve stimulation	
Jundt ¹⁰	2007	Case control	gynaecology outpatient clinic	26 sexual abused patients out of 85 patients with OAB	Overactive bladder	Yes
Link ²	2007	Cross-sectional	2301 men, 3205 women Boston area, USA	Men 373 (16.2%) Women 850 (26.5%)	Urinary frequency, urinary urgency, nocturia	Yes
Delago ¹¹	2008	Retrospective (charts) study	161 girls who disclosed sexual abuse	161	Dysuria	Yes
Peters ¹²	2008	Case control	87 women with chronic bladder pain	44/87 (51%)	interstitial cystitis/painful bladder syndrome (IC/PBS)	Yes
Yildirim ¹³	2011	Retrospective study and case control	52 abused patients and 30 controls	52	Incontinence, urgency	No

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Appendix

Questionnaires:

Date of birth:

Do you have a partner:

Yes No

How many children do you have:

Do you smoke?

Yes No

Do you have:

* Vascular or heart problems

Yes No

* High blood pressure

Yes No

* Diabetes

Yes No

* Neurological complaints

Yes No

* Psychiatric complaints

Yes No

Do you menstruate?

- Yes, regularly
 Yes, but not regularly
 No, I haven't had a period since a few months
 No, I haven't had a period for more than a year

Did you have negative sexual experiences (sexual abuse) in the past?

Yes No

Would you be willing to provide some more information about this?

Yes No

What medication do you currently use?

Did you have any surgical procedures in the past? If yes, please list them here

Urological complaints (more than one urological complaint can be filled)Pain in the region of the kidney? Yes No Blood in urine? Yes No Microscopic (not visibly red) Yes No Macroscopic (bloody urine) Yes No Urinary tract infection(s) Yes No Voiding complaints Yes No Incontinence Yes No Abdominal pain Yes No Abnormalities on radiological examination
Yes No Referred by other physician to the urologist, but no urological complaints
Yes No

Other, please explain:

PART IV:**CONCLUSIONS**

Chapter 8:

Sexual abuse and over active bladder: adding the pelvic floor pathway to the sexual abuse - overactive bladder - model

Based on:

Beck JJH, Nicolai MP, Voorham- Zalm P, Pelger RCM, Elzevier HW *Sexual abuse and over active bladder: adding the pelvic floor pathway to the sexual abuse - over active bladder - model*. Submitted

Abstract

Introduction: We review evidence linking pelvic floor dysfunction (PFD) to the current concept of sexual abuse (SA), overactive bladder (OAB) and corticotrophin releasing factor (CRF).

Methods: We review the literature and add the pelvic floor pathway to the current Klausner-Steers model for emotional influence on the bladder.

Results: CRF is expressed in areas of the central nervous system that response to stress and is increased during anxiety and after SA. CRF is expressed in areas of the central nerve system that control voiding and response to stress. Epidemiological and case control studies reveal an association between SA and PFD. PFD is related to long-lasting bladder outlet obstruction (BOO), which can lead to OAB.

Conclusions: PFD after SA is another link between the relation of SA and OAB. Besides CRF and OAB as a therapeutic target, maybe pelvic floor physiotherapy can improve OAB after SA. We add the pelvic floor pathway to the current Klausner-Steers model for emotional influence on the bladder.

Introduction

The Pelvic Floor and Sexuality Research Group at the department of urology at Leiden University Medical Center, the Netherlands, investigates pelvic floor function and dysfunction in relation to urological, sexual and pelvic floor related complaints. We review evidence linking pelvic floor dysfunction (PFD) to the current model of sexual abuse (SA), overactive bladder (OAB) and corticotrophin releasing factor (CRF). Sexual abuse (SA) is defined by International Society for the Prevention of Child Abuse and Neglect as "a social and medical problem in which a child under the age of consent is involved in an act resulting in sexual satisfaction of an adult or connivance of such an act"¹. The frequency with which children are exposed to sexual advances from adults varies according to the definition of abuse, the age range studied, and the methods of ascertainment. The prevalence of SA is estimated to be 12% to 25% for females and 8% to 10% males². A meta-analysis shows that a history of SA is associated with lifetime diagnosis of multiple disorders, like seizures, gastrointestinal problems and non-specific chronic pelvic pain³. Another recent meta-analysis demonstrates that SA is associated with multiple psychiatric problems, including lifetime diagnosis of anxiety disorders, depression, eating disorders, post-traumatic stress disorder (PTSD), sleep disorders, and attempted suicide⁴. The reported prevalence of SA-history in the urological population varies from 2% for males to 13% for females⁵. Selection bias and recall bias are mentioned; therefore more studies are necessary to measure the exact prevalence of SA in urologic patient populations. In 2004 a biological model explaining the emotional influence on the bladder through the CRF-OAB-pathway was presented by Klausner and Steers⁶. Their model is shown in Figure 1. It was until 2007 that SA was causally related to OAB, using the Hill-criteria^{7,8}. We add the role of PFD to the current available Klausner-Steers model (Figure 2). OAB is defined as: urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection (UTI) or other obvious pathology⁹.

Klausner-Steers model⁶

Stress and anxiety are intimately associated with bladder function. The extensive neural networking, multilevel inputs and reciprocal innervation involved in the control of bladder function suggest a multifactorial etiology⁶. CRF, a peptide synthesized in neurons of the paraventricular nucleus (PVN) of the hypothalamus, has been found to be a key regulator of the endocrine, behavioral, autonomic and immune responses to stress⁶. After its release from the hypothalamus, CRF triggers the release of adrenocorticotrophic hormone (ACTH) in the pituitary. ACTH, in turn, stimulates the release of the stress steroid, cortisol, from the adrenal cortex. In this manner CRF acts as a hormone, triggering the peripheral stress response also known as the "hypothalamic-pituitary-adrenal (HPA) axis". CRF also acts directly in the central nervous system as a neurotransmitter. Neurons in the brain expressing CRF project to critical areas that control the central stress response. These areas include the locus ceruleus - an area containing noradrenergic neurons and important in the regulation of the

flight or fight response, the dorsal raphe nucleus - an area rich in serotonin and potentially important in the pathogenesis of major depression, the central nucleus of the amygdale - a relay center for emotional stress and visceral pain, and the hippocampus - a region in memory processing⁶. In mammalian species CRF binds to 2 cyclic adenosine monophosphate coupled receptors, CRF-R1 and CRF-R2. CRF-R1 is prominent in the limbic regions, and CRF-R2 is more widely distributed in the brain and spinal cord. CRF appears to be the endogenous ligand for CRF-R1 as it has 10-fold greater binding affinity for this receptor than for CRF-R2. Acute and chronic stress produces significant increases in CRF mRNA in Barrington's nucleus, the region that controls micturition. Moreover, electrical stimulation of these areas of the brain excites or inhibits bladder activity. CRF also is important in the control of micturition at the level of the spinal cord and may be important in sensory processing of painful bladder stimuli. Patients with interstitial cystitis (IC), an idiopathic disorder characterized by urinary frequency, urgency and pain, also manifest HPA dysregulation. Patients with IC display symptom exacerbation when exposed to stress. Specific data regarding the role of CRF directly on micturition are conflicting and incomplete. However, due to substantial cross-innervation of the colon and bladder, CRF, mediated through CRF-R1, would be expected to stimulate the bladder similar to its excitatory action on the colon⁶.

The pelvic floor pathway

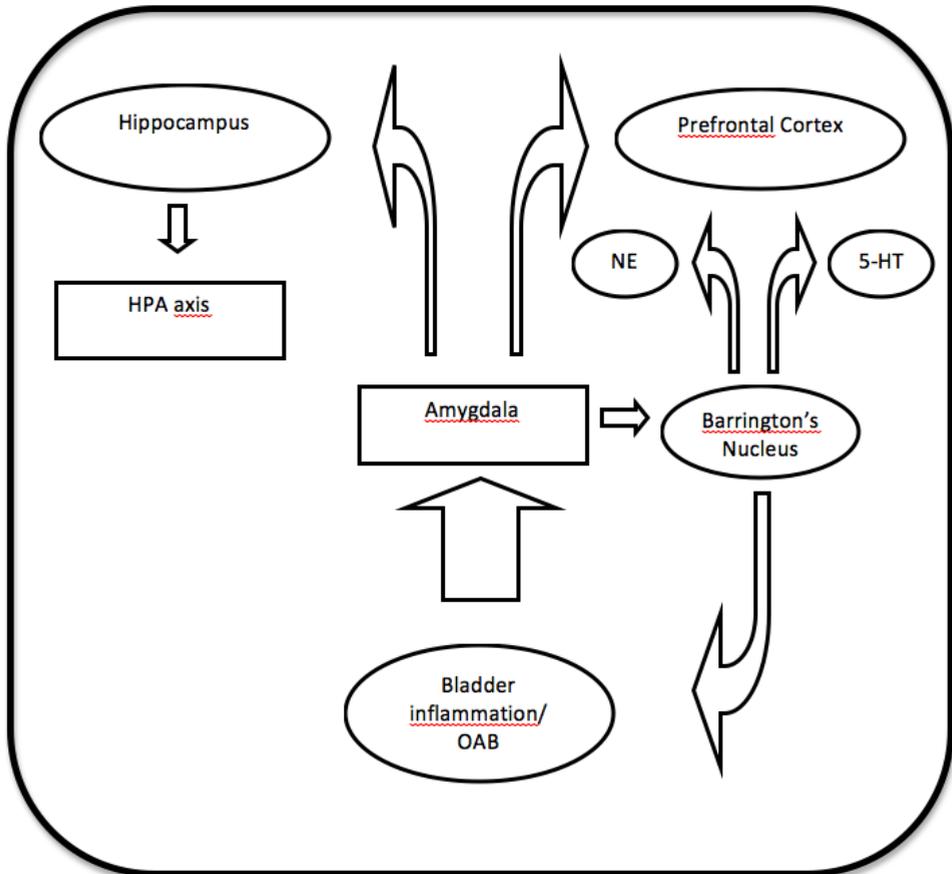
We hypothesise that pelvic floor dysfunction (PFD) is another link between sexual abuse history and OAB. The pelvic floor is known to be an integrated structure, influenced by psychological and physical causes. A higher prevalence of multiple pelvic floor complaints, like micturition, defecation and sexual pain, are seen in patients with sexual abuse history¹⁰. Davila et al reported significant more pelvic floor related urological complaints like dribbling, slow urinating stream and stress incontinence after SA¹¹. The pelvic floor comprises several layers, including the pelvic diaphragm (levator ani and coccygeus muscles) and the urogenital diaphragm. Each diaphragm has its own 3D shape and position with regard to the internal pelvic organs. The urogenital diaphragm consists of a deep layer, the perineal membrane, and a superficial layer, consisting of the bulbospongiosus muscle and the ischiocavernosus muscle. The levator ani muscle is made up of the iliococcygeus, pubococcygeus, and puborectalis muscles. Together with the urethral and anal sphincters, these muscles play an important role in preventing complaints of micturition, defecation, sexual dysfunction, prolapse and/or pelvic floor pain. The development of one of these complaints is referred to as PFD¹². It has been hypothesized that patients with PFD have voiding difficulties due to a higher tone at rest of the pelvic floor^{9,13,14}. Many of them have episodes of obstructive urinating complaints. As in benign prostate hyperplasia, long-lasting bladder outlet obstruction (BOO) can lead to OAB symptoms¹⁵. Obstruction-induced changes in the bladder are of two basic types. First, the changes that lead to detrusor instability or decreased compliance are clinically associated with symptoms of frequency and urgency. Second, the changes associated with decreased detrusor

contractility are associated with further deterioration in the force of the urinary stream, hesitancy, intermittency, increased residual urine, and (in a minority of cases) detrusor failure¹⁶. Pelvic floor physiotherapy can be used to treat pelvic floor related BOO and thus relieving OAB symptoms¹⁷. Unfortunately randomised studies describing improvement of urological complaints in SA survivors treated with pelvic floor physiotherapy are not available. Still, we are convinced that SA can lead to PFD (e.g. pelvic floor overactivity) resulting in BOO, resulting in voiding symptoms and later on in storage symptoms (OAB). In women with interstitial cystitis/painful bladder syndrome (IC/PBS) two randomized clinical trials showed that myofascial physical therapy significantly improved patients bladder complaints compared to treatment with global therapeutic massage, indicating a role of the pelvic floor in bladder complaints^{18,19}. We postulate an extra pathway to the existing Klausner-Steers model by adding the pelvic floor pathway. An overactive pelvic floor leads to BOO, which when long-lasting leads to OAB, just as in OAB after BPH. The biological influence of stress and abuse on the pelvic floor is not cleared out yet, but epidemiological and clinical studies point out in that direction. Figure 2.

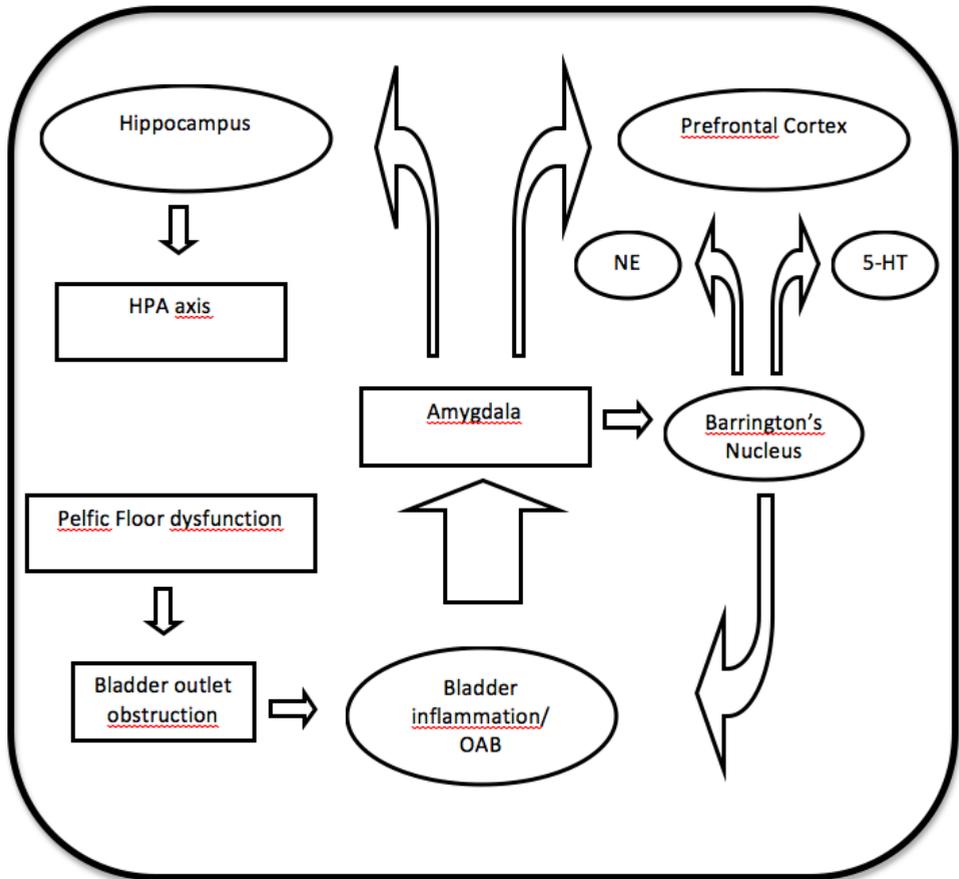
Conclusion

PFD after SA is another link between the relation of SA and OAB. Besides CRF and OAB as a therapeutic target, maybe pelvic floor physiotherapy can improve OAB after SA. We add the pelvic floor pathway to the current Klausner-Steers model for emotional influence on the bladder.

Figure 1: The Klausner-Steers model for emotional influence on the bladder



Central stress response. In this model bladder inflammation sends nociceptive input to central nervous system via afferent nerves. Nociceptive stimuli are processed in amygdala which acts as relay station for processing emotional stress and visceral pain. Signals are relayed to hippocampus where memory processing occurs and can trigger peripheral stress response via HPA axis. Signals also project to prefrontal cortex for higher order processing and directly to Barrington's nucleus, projections are sent to locus ceruleus, which is rich norepinephrine (NE), and dorsal raphe nucleus, which is rich in serotonin (5-HT) and directly to lumbosacral spinal cord where descending inputs can influence afferent processing or motor output to bladder neurons.

Figure 2: Adding the pelvic floor dysfunction pathway to the Klausner-Steers model

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Chapter 9:

Conclusions and general discussion

Conclusions and general discussion

The primary aim of this study was to investigate the prevalence of sexual abuse in a urological outpatient clinic and to see if differences could have been made in urological populations, like a general urological clinic, a university urological clinic and a tertiary university pelvic floor clinic. Sexual abuse prevalence rates measured with female patients are respectively 13% in a general urological outpatient clinic (HagaZiekenhuis), 17% in an academic urological outpatient clinic (Leiden University Medical Center), 22% and 23% in a university outpatient pelvic floor center (University of Manitoba and LUMC)¹⁻⁴. All prevalences are in the same range as the sexual abuse prevalence in general population. The conclusion is that patients with sexual abuse do not avoid the urologist, nor do they present themselves more often. There is a tendency that the more complex the urological pathology, the higher the prevalence of sexual abuse, which is climbing from 13% (normal urology clinic) to 17% (university urology clinic) to 22-23% (university pelvic floor center). The measured prevalence of male patients is 2%¹. This is lower than the prevalence of 8%-10% mentioned in international literature, but comparable to the repeatedly measured Dutch prevalence of 4% in teenagers and adults⁵⁻⁸. The lower percentage of 2% can be explained by the research population in which age was higher than 60 on average and median. People under 60 are more willing to report a history of SA than people older than 60⁹. The same significance was found in our study in which patients under 60 also reported sexual abuse more often¹. Recall bias or embarrassment on this topic by an older generation can be an explanation for this low prevalence. Urologists are willing to ask their patients about sexual abuse history. Nearly 70% of Dutch urologists always ask their female patients about SA history. Those who doesn't, do ask when a patient suffers from abdominal pain (78%) or urgency/frequency (62%)¹⁰. Although Dutch urologists frequently ask about sexual abuse, they underestimate the prevalence of sexual abuse. They estimate the prevalence to be 10% or less. In contrast to sexual abuse, only 6% of the urologists ask all their female patients about female sexual dysfunction¹¹. Most urologists ask about sexual dysfunction when a patient complains about lower abdominal pain (87%), incontinence (76%), urgency or frequency (71%), or urinary tract infections (66%). Urologists report a need for education and training about this topic. Most patients with sexual abuse history (72%) don't mind if urologists ask about sexual abuse¹. Although the study was not primarily designed to answer this question, urologists should not be afraid raising the topic of sexual abuse, because patients are not concerned by this inquiry. Although patients with sexual abuse don't mind being asked about sexual abuse, half of them thought this information was not relevant for their urologist. Lack of knowledge of sexual abuse leading to urological complaints can be an explanation for this. Analysis of patient data of our academic pelvic floor population in Leiden showed that patients with sexual abuse had significantly more often complaints in more domains of the pelvic floor compared to pelvic floor patients without sexual abuse, suggesting that sexual abuse can lead to multiple pelvic floor related complaints². In our Canadian pelvic floor study, we compared female patients with pelvic floor

complaints to patients without pelvic floor related complaints using the PeLFIs⁴. Looking more specified in the domains of the pelvic floor, it is shown that constipation, sexual dysfunction and urgency/frequency are all independently significant correlated with sexual abuse. Looking to urological complaints in an urological population, an association was found between a history of sexual abuse and urological complaints, namely a higher percentage of voiding complaints (63%), incontinence(61%) and urinary tract infections(53%) in the SA group, but the differences were not significant compared to patients without sexual abuse (voiding complaints 53%, incontinence 48% and urinary tract infections 44%)³. Remarkably patients with sexual abuse reported significant more urological complaints as reason for referral to the urologist. A model was postulated to clarify the two main pathways in the mechanism of sexual abuse leading tot urological complaints¹². The first pathway is the response of the pelvic floor pathway to stimuli, which leads to bladder outlet obstruction en over active bladder. The second pathway is the direct response to stimuli of the central nerve system on the bladder. More research is necessary to clarify the influences and the mechanisms responsible for the urological symptoms and its association with sexual abuse. More research is necessary to prove that urological complaints in relation to sexual abuse must be treated in a biological-psychological model with a combination of pelvic floor physiotherapy and psychological treatment. Randomised trials should be initiated to prove this. Urologist should not be afraid to inquire about sexual abuse because it's relevant information for choosing the best treatment options for the patient and patients with sexual abuse don't mind if urologist inquires it.

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PART V:

SUMMARY EN SAMENVATTING

Chapter 10:

Summary

Chapter 1: *Introduction.*

The primary aim of this study is to investigate the prevalence of sexual abuse in a urological outpatient clinic. Can differences be made in urological population, i.e. general urological clinic, a university urological clinic and a tertiary university pelvic floor clinic? Do urologists inquire about female sexual dysfunction and sexual abuse history? And if so, what percentage of the Dutch urologist does so? What do sexual abuse patients think about screening for sexual abuse history? Can we find predicting pelvic floor symptoms as a sign of sexual abuse history? And finally, do female urology patients with sexual abuse history more often present urological storage symptoms and/or pelvic floor complaints than patients without sexual abuse?

Chapter 2: *The place of female sexual dysfunction in the urological practice: results of a Dutch survey.*

Introduction: Female sexual dysfunction is a highly prevalent and often underestimated problem. There is a strong association between urological complaints and female sexual dysfunction. **Aim:** The purpose of this survey was to evaluate how Dutch urologists address female sexual dysfunction in their daily practice. **Methods:** We performed an anonymous survey study. A 17-item anonymous questionnaire was mailed to all 405 registered members of the Dutch Urology Association (urologists and residents in urology). **Main Outcome Measures:** The survey results. **Results:** One hundred eighty-six complete surveys of eligible respondents were returned (45.9% response rate). Ten respondents (5.5%) stated that they ask each female patient for sexual function; 87.1% stated that they ask for sexual function when a patient complains about lower abdominal pain (87.2%), incontinence (75.8%), urgency or frequency (70.5%), or urinary tract infections (65.8%). Many respondents (40.3%) do not think that female sexual dysfunction is meaningful in a urological practice. The majority of respondents (91%) underestimate the frequency of female sexual dysfunction in a urological clinic. Respondents who believe the frequency of female sexual dysfunction to be at least 30% tend to ask more often for sexual function than the rest of the group ($p=0.08$). **Conclusions:** Overall, many urologists do not consistently ask each female patient for sexual function and underestimate the prevalence of female sexual dysfunction. For the majority of the members of the Dutch Urological Association, female sexual dysfunction is not part of routine urological practice. There is, therefore, a need for better implementation of education and training at both undergraduate and postgraduate levels.

Chapter 3: *Female sexual abuse evaluation in the urological practice: results of a Dutch survey.*

Introduction: There is a strong association between urological complaints and a history of sexual abuse, especially in females. It is not known whether urologists integrate these facts in their daily practice. **Aim:** To evaluate whether Dutch urologists address the issues of sexual abuse in their female patients and to evaluate their perception of sexual abuse prevalence. **Methods:** A five-item

anonymous questionnaire was mailed to all 405 registered members of the Dutch Urology Association (urologists and residents). **Main outcome measures:** The results of the survey. **Results:** One hundred eighty-six surveys of eligible respondents were returned (45.9% response rate). A total of 68.8% stated that they always ask their female patients about sexual abuse before doing the physical examination. Overall, 79.3% said to do so when a patient has certain urological complaints: 77.6% in case of lower abdominal pain, 62.1% in urgency or frequency, 41.4% in incontinence, 29.3% in urinary tract infections, and 3.4% in haematuria. The majority of the respondents (74.3%) estimated the frequency of sexual abuse in their urological clinic to be equal or less than 10%. **Conclusions:** Nearly 70% of the responding Dutch urologists and residents ask their female patients about possible sexual abuse. They estimate the frequency of sexual abuse in their female patients to be equal or less than 10%.

Chapter 4: *Prevalence of sexual abuse among patients seeking general urological care.*

Introduction: Sexual abuse history can be found in the backgrounds of an important fraction of men (8-10%) and women (12-25%). Until now there are no data about this prevalence within a urological patient population. **Aim:** To establish the prevalence of sexual abuse among men and women visiting a urological outpatient clinic and to assess their opinion on screening for sexual abuse by urologists. **Methods:** A questionnaire to identify sexual abuse was translated into Dutch, English, and Turkish, and was adjusted for use in men. These questionnaires were anonymously distributed among 1,016 adult patients attending the urological outpatient clinic. **Main outcome measure:** The self-reported prevalence of sexual abuse. Secondary outcome measures were data about the assailant, victim's age at the time of the abuse, if the abuse was disclosed to the urologist, if the urologist had asked for sexual abuse and patient opinions on standard screening for sexual abuse in urological care. **Results:** A total of 878 questionnaires were returned, giving a total response rate of 86.4% (878/1,016). Thirty-three patients refused to participate. This resulted in 845 filled-out questionnaires suited for analysis (845/1,016 = 83.2%). There were more male (75.7%) than female respondents (21.8%); 2.1% (13/624) and 13.0% (21/161) of the male and female respondents reported a history of sexual abuse, respectively. Almost 42% reported a stranger as assailant. In nearly 90%, the sexual abuse took place before adulthood: 56.2% in childhood and 31.2% in adolescence. Fifteen percent of the respondents with sexual abuse had it disclosed to their urologist. More than 70% of the abused respondents considered the idea to screen for sexual abuse in urological practice to be a good one. **Conclusions:** The prevalence of sexual abuse in patients seeking urological care in the Netherlands is 2.1% for men and 13.0% for women.

Chapter 5: *Multiple pelvic floor complaints are correlated with sexual abuse history.*

Introduction: The relationship between sexual abuse and urinary tract symptoms, sexual abuse and gastrointestinal symptoms, or sexual abuse and sexual dysfunction has been described before.

A correlation between all these symptoms and sexual abuse has not yet been reported. **Aims:** The first aim of this study was to document the prevalence rates of reported sexual abuse in a large sample of female patients with complaints of the pelvic floor. The second aim was to evaluate the frequency of complaints in the different domains of the pelvic floor, such as complaints of micturition, defecation, and sexual function, in female patients reporting sexual abuse, and comparing these data with female patients without a history of sexual abuse. **Methods:** Female patients with pelvic floor complaints were evaluated in a tertiary referral center. History taking was assessed by a pelvic-floor clinician. The number of domains with complaints of patients with a history of sexual abuse was compared with the number of domains with complaints of patients without sexual abuse. **Main Outcome Measures:** The number of patients who reported sexual abuse and the frequency of complaints in the different domains of the pelvic floor. The number of domains of patients with a history of sexual abuse was compared with patients without a history of sexual abuse. **Results:** Twenty-three percent (42/185) of the patients reported a history of sexual abuse. The female patients with a history of sexual abuse had significantly more complaints in three domains of the pelvic floor (35/42) compared with the no abused (69/143) (83% vs. 48%, $p < 0.001$). **Conclusions:** Twenty-three percent of the female patients in a pelvic floor center evaluated by a pelvic-floor clinician reported a history of sexual abuse. In our sample, the patients with multiple pelvic floor complaints (micturition, defecation, and sexual function) related to pelvic floor dysfunction were more likely to have a history of sexual abuse than the patients with isolated complaints.

Chapter 6: *Sexual abuse and pelvic floor complaints: a case-control study to identify which pelvic floor complaints are related to sexual abuse using the PeLFIs (a validated pelvic floor questionnaire).*

Introduction: Sexual abuse is present in about a quarter of female patients presenting with complaints of micturition, defecation and/or sexual function. The pelvic floor plays an important role in the aetiology of these complaints. **Aim:** To find out which complaints from the domains of the pelvic floor are correlated with sexual abuse. **Methods:** A case-control study in which an administered validated questionnaire the Pelvic floor Inventories (PeLFIs) was used to evaluate 55 patients with pelvic floor dysfunction and 50 controls in a tertiary referral center in Canada. Complaints of the pelvic floor of patients with and without sexual abuse were compared. **Main Outcome Measures:** The survey results. **Results:** Patients with pelvic floor complaints showed a significantly higher percentage of sexual abuse (22%) compared to the control group (2.1%) ($p = 0.008$). In the pelvic floor dysfunction group a history of SA correlated significantly with complaints of constipation ($p < 0.01$), sexual dysfunction ($p < 0.01$) and urgency/frequency ($p < 0.01$). **Conclusion:** In a pelvic floor population, constipation and/or sexual dysfunction and/or urgency/frequency are significantly correlated with sexual abuse.

Chapter 7: *Urological complaints and sexual abuse: a case control study identifying multiple urological complaints in relation to sexual abuse history.*

Introduction: The relationship between sexual abuse and urinary tract symptoms has been described for urgency, frequency and nocturia. **Aims:** To investigate if other urological complaints in females, like urinary tract infections, incontinence, voiding complaints and lower abdominal pain are also correlated with a history of sexual abuse (SA) and to measure the prevalence of sexual abuse in our urological patient population, using a clinical case control study. **Methods:** 1383 female patients of 18-years or older visiting our outpatient urological university clinic were asked to fill out a questionnaire evaluating referral indications and urological complaints. The questionnaire consisted out of two parts. The first was designed to collect data about demographic characteristics and medical history. The second part included referral indications, the urological complaints and a possible history of SA. The sample was divided into two groups: those with and those without a history of SA. **The Outcome Measures:** I. The comparison of the frequency of voiding complaints, urinary tract infections (UTI's), lower abdominal pain, hematuria and incontinence in respondents with and without SA. II. The prevalence of SA in female patients presenting at our university urological outpatient clinic. III. The number of urological symptoms presented at the time of referral by respondents with a history of SA compared the non-abused. **Results:** 436/1383 (32%) patients were willing to participate. 304 (70%) questionnaires were properly filled in. The reported prevalence of sexual abuse was 17% (51/304). More than half of the females with a history SA presented with voiding complaints (32/51 $p=0.18$), incontinence (31/51 $p=0.10$) and urinary tract infections (27/51 $p=0.22$). However, comparing the data of respondents without SA we found no significant differences with regards specific complaints. Patients with SA report more symptoms than those without (Armitage's trend test 0.14 ($p=0.004$) for 4 complaints or more). **Conclusions:** No significant correlation between SA and voiding complaints, incontinence nor lower abdominal pain was found. The prevalence rate of SA in female patients visiting our university urological outpatient clinic was 17%. These abused females mentioned more synchronous complaints as reason for referral at their first visit than the non-abused.

Chapter 8: *Sexual abuse and over active bladder: adding the pelvic floor pathway to the sexual abuse – over active bladder – model.*

Introduction: We review evidence linking pelvic floor dysfunction (PFD) to the current concept of sexual abuse (SA), overactive bladder (OAB) and corticotrophin releasing factor (CRF). **Methods:** We review the literature and add the pelvic floor pathway to the current Klausner-Steers model for emotional influence on the bladder. **Results:** CRF is expressed in areas of the central nervous system that response to stress and is increased during anxiety and after SA. CRF is expressed in areas of the central nerve system that control voiding and response to

stress. Epidemiological and case control studies reveal an association between SA and PFD. PFD is related to long-lasting bladder outlet obstruction (BOO), which can lead to OAB. **Conclusions:** PFD after SA is another link between the relation of SA and OAB. Besides CRF and OAB as a therapeutic target, maybe pelvic floor physiotherapy can improve OAB after SA. We add the pelvic floor pathway to the current Klausner-Steers model for emotional influence on the bladder.

Chapter 11:**Samenvatting**

Hoofdstuk 1: *Introductie.*

Het primaire doel van dit proefschrift is het bestuderen van de prevalentie van seksueel misbruik in een urologische populatie. Zijn er prevalentieverschillen tussen een polikliniek urologie van een algemeen ziekenhuis, een polikliniek urologie in een UMC en een academische bekkenbodencentrum? Vragen urologen hun patiënten naar seksueel misbruik in het verleden? Vragen urologen naar het seksueel functioneren van hun vrouwelijke patiënten? En als ze het doen, welk percentage van de urologen vraagt ernaar? Wat vinden patiënten met een verleden van seksueel misbruik ervan als de uroloog er naar vraagt? Zijn er bepaalde urologische of bekkenbodemklachten die vaker voorkomen bij slachtoffers van misbruik?

Hoofdstuk 2: *Het betrekken van vrouwelijke seksuele disfuncties in de urologische praktijk: resultaten van een Nederlandse enquête.*

Introductie: Vrouwelijk seksueel disfunctioneren is een vaak voorkomend en vaak onderschat probleem. Er is een sterke associatie tussen urologische klachten en vrouwelijk seksueel disfunctioneren. **Doel:** Het doel van deze enquête is het evalueren van het bespreekbaar maken van vrouwelijk seksueel disfunctioneren door urologen in hun dagelijkse werkzaamheden.

Methode: Middels een anonieme enquête, waarbij een vragenlijst met 17 items naar alle 405 geregistreerde leden van de Nederlandse Vereniging voor Urologie (urologen en artsen in opleiding tot specialist uroloog) is gestuurd. **Belangrijkste uitkomstmaten:** De resultaten van de enquête.

Resultaten: 186 complete vragenlijsten van evenzoveel respondenten zijn ontvangen (45.9% respons). Tien respondenten (5.5%) meldden dat ze alle vrouwen vragen naar het seksueel functioneren. De overigen vragen naar seksueel functioneren bij onderbuikspijnen (87.2%), incontinentie (75.8%), urgency of frequency (70.5%), of urineweginfecties (65.8%). Veel respondenten (40.3%) denken dat vrouwelijk seksueel disfunctioneren niet relevant is voor de urologische praktijkvoering. De overgrote meerderheid (91%) onderschat de prevalentie van vrouwelijk seksueel disfunctioneren in een urologische praktijk. Respondenten, die de prevalentie van vrouwelijk seksueel disfunctioneren schatten op minimaal 30%, vragen vaker naar vrouwelijk seksueel disfunctioneren dan de rest van de groep. ($p=0.08$). **Conclusie:** De meeste urologen vragen niet bij iedere patiënte naar vrouwelijk seksueel disfunctioneren en ze onderschatten de prevalentie ervan. Voor de meerderheid van de respondenten past vrouwelijk seksueel disfunctioneren niet in de algemene praktijkvoering. Er is behoefte aan beter onderwijs en training over dit onderwerp.

Hoofdstuk 3: *Vragen naar een verleden met seksueel misbruik bij vrouwelijke patiënten in de urologische praktijk: resultaten van een Nederlandse enquête.*

Introductie: Er is een verband tussen urologische klachten en een voorgeschiedenis met seksueel misbruik, vooral bij vrouwelijke patiënten. Het is niet bekend of urologen deze kennis integreren in

hun dagelijkse werkzaamheden, door ernaar te vragen. **Doel:** Evalueren of Nederlandse urologen seksueel misbruik ter sprake brengen en peilen wat de urologen schatten wat de prevalentie van seksueel misbruik zou zijn in hun urologische populatie. **Methode:** Een 5-item vragenlijst is verzonden naar alle 405 geregistreerde leden van de Nederlandse Vereniging voor Urologie (urologen en artsen in opleiding tot specialist uroloog). **Belangrijkste uitkomstmaten:** De resultaten van de enquête. **Resultaten:** 186 complete vragenlijsten van even zoveel respondenten zijn ontvangen (45.9% respons). Van de respondenten meldt 68.8% dat ze voor een lichamenlijk onderzoek altijd vragen naar seksueel misbruik. Over het algemeen vraagt 79.3% er naar misbruik bij bepaalde klachten: 77.6% bij onderbuikspijn, 62.1% bij urgency of frequency, 41.4% bij incontinentie, 29.3% bij urineweginfecties en 3.4% bij hematurie. De meerderheid van de respondenten (74.3%) schat de prevalentie van seksueel misbruik bij hun patiënten op 10% of minder. **Conclusie:** Bijna 70% van de respondenten vraagt hun patiënten naar mogelijk seksueel misbruik. Zij schatten de prevalentie op 10% of minder.

Hoofdstuk 4: *Prevalentie van seksueel misbruik bij patiënten op een algemene polikliniek urologie.*

Introductie: De prevalentie van seksueel misbruik varieert van 8-10% bij mannen en 12-25% bij vrouwen. Tot nu toe zijn er geen gegevens over de prevalentie op een polikliniek urologie. **Doel:** Het meten van de prevalentie van een voorgeschiedenis met seksueel misbruik op een polikliniek urologie en het peilen van de mening van slachtoffers van seksueel misbruik naar het standaard screenen van de uroloog naar seksueel misbruik. **Methode:** Een vragenlijst over seksueel misbruik is vertaald naar het Nederlands, Engels en Turks. Tevens zijn de vragen aangepast aan mannelijke patiënten. Deze vragenlijst is uitgedeeld aan 1,016 volwassen poliklinische patiënten. **Belangrijkste uitkomstmaten:** De gerapporteerde prevalentie van seksueel misbruik. Secundaire uitkomstmaten zijn data over de dader van het misbruik, leeftijd waarop het misbruik plaatsvond, of de patiënt het misbruik had gemeld aan de uroloog, of de uroloog heeft gevraagd naar seksueel misbruik en wat de mening is van slachtoffers van seksueel misbruik naar de standaard vragen hiernaar. **Resultaten:** 878 ingevulde vragenlijsten kwamen retour, wat leidde tot een responspercentage van 86.4% (878/1,016). 31 patiënten weigerden deelname. Dit resulteerde in 845 ingevulde vragenlijsten, die geschikt waren voor analyse (845/1,016 = 83.2%). Er waren meer mannelijke (75.7%) dan vrouwelijke respondenten (21.8%); 2.1% (13/624) van de mannen en 13.0% (21/161) van de vrouwen melden een voorgeschiedenis met seksueel misbruik. Ruim 40% meldt een vreemde als dader. In bijna 90% vond het misbruik plaats voor volwassenheid: 56.2% tijdens de kinderjaren en 31.2% als adolescent. Meer dan 70% van de slachtoffers vindt het een goed idee als urologen standaard vragen naar seksueel misbruik. **Conclusie:** De prevalentie van seksueel misbruik op een algemene polikliniek urologie in Nederland is 2.1% voor mannen en 13.0% voor vrouwen. Een ruime meerderheid van de slachtoffers vindt het een goed idee als de uroloog naar seksueel misbruik vraagt.

Hoofdstuk 5: *Multipele klachten van de bekkenbodemp zijn gecorreleerd met seksueel misbruik.*

Introductie: De relatie tussen seksueel misbruik en urologische klachten, seksueel misbruik en gastrointestinale klachten en seksueel misbruik en seksuele klachten zijn al eerder beschreven. Een correlatie tussen al deze klachten en seksueel misbruik is niet eerder beschreven. **Doel:** Het primaire doel van de studie is het meten van de prevalentie van seksueel misbruik in een grote groep patiënten met bekkenbodempromblematiek. Het tweede doel is het meten van de frequenties van de klachten in de diverse domeinen van de bekkenbodem in relatie tot seksueel misbruik en deze te vergelijken met patiënten met bekkenbodempromblematiek zonder seksueel misbruik in de voorgeschiedenis. **Methode:** Vrouwelijke patiënten met bekkenbodempromblematiek werden geanalyseerd op een academische bekkenbodem-polikliniek. Een bekkentherapeute nam de anamnese af. Het aantal domeinen met klachten bij patiënten met seksueel misbruik in het verleden, werd vergeleken met patiënten zonder seksueel misbruik.

Belangrijkste uitkomstmaten: De prevalentie van seksueel misbruik. De frequentie van de domeinen van de bekkenbodem met klachten, vergeleken tussen patiënten met en zonder seksueel misbruik. **Resultaten:** 23% (42/185) van de patiënten meldt een verleden met seksueel misbruik. Patiënten met seksueel misbruik in het verleden meldden significant vaker klachten in drie domeinen van de bekkenbodem (35/42) vergeleken met patiënten zonder misbruik (69/143) (83% vs 48%, $p < 0.001$). **Conclusie:** 23% van de patiënten op een academische bekkenbodempolikliniek meldt een verleden met seksueel misbruik. Patiënten met multipele klachten van de bekkenbodem (mictieklachten, defecatieklachten en seksuele disfunctie) hadden vaker een verleden met seksueel misbruik dan patiënten met geïsoleerde klachten.

Hoofdstuk 6: *Seksueel misbruik en klachten van de bekkenbodem: een case-control studie die bestudeert welke klachten van de bekkenbodem zijn gerelateerd aan seksueel misbruik, gebruikmakend van de PeLFis (een gevalideerde bekkenbodempvragenlijst).*

Introductie: Een voorgeschiedenis met seksueel misbruik is aanwezig bij ruim een kwart van de vrouwelijke patiënten met mictieklachten, defecatieklachten en/of seksuele disfunctie. De bekkenbodem speelt een belangrijke rol in de etiologie van deze klachten. **Doel:** Bestuderen welke klachten uit de domeinen van de bekkenbodem zijn gecorreleerd met seksueel misbruik. **Methode:** Een case-control studie waarbij een gevalideerde vragenlijst is gebruikt (PeLFis). 55 patiënten met een bekkenbodempdisfunctie zijn vergeleken met 50 controles. De studie vond plaats in een tertiair bekkenbodem centrum in Canada. Klachten van de bekkenbodem van patiënten met en zonder seksueel misbruik werden vergeleken. **Belangrijkste uitkomstmaten:** De resultaten van de enquête. **Resultaten:** In de groep patiënten met klachten van de bekkenbodem wordt vaker seksueel misbruik gerapporteerd (22%) dan in de controle groep (2%) ($p = 0.008$). In de groep met patiënten met bekkenbodempklachten is seksueel misbruik significant gecorreleerd met constipatie ($p < 0.01$), seksuele disfunctie ($p < 0.01$) en urge / frequency

($p < 0.01$). **Conclusie:** In een populatie van patiënten met bekkenbodemplakten zijn constipatie en/of seksuele disfunctie en/of urge / frequency significant gecorreleerd met seksueel misbruik.

Hoofdstuk 7: *Urologische klachten en seksueel misbruik: een case-control studie om meerdere urologische klachten te bestuderen in relatie tot seksueel misbruik.*

Introductie: De relatie tussen seksueel misbruik en urinewegsymptomen is beschreven voor urge, frequency en nycturie. **Doel:** Bestuderen of andere urologische symptomen, zoals urineweginfecties, incontinentie, plasklachten en onderbuikspijn, gecorreleerd zijn met seksueel misbruik en het meten van de frequentie van seksueel misbruik op een poli urologie. **Methode:** 1383 vrouwelijke patiënten van 18-jaar of ouder, die de polikliniek urologie bezochten van het LUMC, werden gevraagd een vragenlijst in te vullen over reden voor verwijzing en hun urologische klachten. De vragenlijst bestond uit twee delen. Het eerste deel verzamelde demografische gegevens en gegevens over de medische voorgeschiedenis. Het tweede gedeelte bevatte vragen over reden voor verwijzing, urologische klachten en de mogelijke aanwezigheid van seksueel misbruik. De groep werd verdeeld in patiënten met en zonder seksueel misbruik. **Belangrijkste uitkomstmaten:** I. Vergelijking van de frequentie van mictieklachten, urineweginfecties, onderbuikspijn, hematurie en incontinentie bij patiënten met en zonder seksueel misbruik. II. De prevalentie van seksueel misbruik bij vrouwelijke patiënten die onze polikliniek bezoeken. III. Het aantal synchrone urologische klachten als reden voor verwijzing, vergeleken bij patiënten met en zonder seksueel misbruik. **Resultaten:** 436/1383 (32%) patiënten waren bereid te participeren. 304 (70%) vragenlijsten waren adequaat ingevuld. De gerapporteerde prevalentie van seksueel misbruik was 17% (51/304). Patiënten met seksueel misbruik in de voorgeschiedenis rapporteerden vaker mictieklachten (32/51 $p=0.18$), incontinentie (31/51 $p=0.10$) en urineweginfecties (27/51 $p=0.22$). Echter zijn de verschillen niet significant vergeleken met patiënten zonder seksueel misbruik. Patiënten met seksueel misbruik melden meer synchrone urologische klachten als reden voor verwijzing dan patiënten zonder seksueel misbruik. (Armitage's trend test 0.14 ($p=0.004$) bij 4 klachten of meer). **Conclusies:** Er is geen significant verschil gevonden tussen patiënten met en zonder seksueel misbruik aangaande mictieklachten, incontinentie of onderbuikspijn. De prevalentie van seksueel misbruik in deze groep is 17%. Deze patiënten met seksueel misbruik melden significant meer synchrone urologische klachten als reden voor verwijzing.

Hoofdstuk 8: *Seksueel misbruik en overactieve blaas: toevoeging van de bekkenbodemplakten aan het huidige seksueel misbruik – overactieve blaas- model.*

Introductie: We beoordelen de wetenschappelijke literatuur die een verband legt tussen bekkenbodemplakten en seksueel misbruik. Dit verband wordt geplaatst in het huidige model van seksueel misbruik – overactieve blaas en corticotrophin releasing factor (CRF). **Methode:** Bestuderen van de literatuur en toevoegen van de bekkenbodemplakten aan het huidige Klausner-

Steers model voor emotionele invloed op de blaas. **Resultaten:** CRF wordt gevonden in gebieden van het centrale zenuwstelsel die reageren op stress. CRF neemt toe bij angst en onder andere na seksueel misbruik. CRF wordt ook gevonden in gedeelten van het centrale zenuwstelsel die invloed hebben op de mictie. Epidemiologische en case-control studies leggen een relatie tussen seksueel misbruik en bekkenbodemplachten. Bekkenbodemplachten zijn een van de oorzaken van obstructieve mictie bij vrouwen. Langdurige obstructieve mictie leidt tot een overactieve blaas.

Conclusies: Bekkenbodemplachten na seksueel misbruik zijn een andere link in de relatie tussen seksueel misbruik en overactieve blaas. Naast CRF en de overactieve blaas als aandachtspunt voor behandeling, kan bekkenbodem fysiotherapie worden overwogen als aandachtspunt voor behandeling. Wij voegen de bekkenbodem toe aan het huidige Klausner-Steers model voor de invloed van emoties op de blaas.

Hoofdstuk 9: *Conclusies en algemene discussie.*

Het primaire doel van deze studie was om de prevalentie van seksueel misbruik te onderzoeken in een urologische polikliniek en om te zien of verschillen kunnen zijn in urologische populaties, zoals een algemene urologische kliniek, een universiteitskliniek en een tertiaire universitaire bekkenbodemplkliniek. De prevalentie is respectievelijk 13% in een algemene urologische polikliniek (HagaZiekenhuis), 17% in een academische urologische polikliniek (Leids Universitair Medisch Centrum), 22% en 23% in een universitaire poliklinische bekkenbodem centrum (Universiteit van Manitoba en LUMC). Alle prevalenties zijn in dezelfde orde van grootte als de prevalentie van seksueel misbruik in de algemene bevolking. De conclusie is dat patiënten met seksueel misbruik de uroloog niet mijden, noch presenteren zij zich vaker. Er is een tendens dat hoe complexer de urologische pathologie is, hoe hoger de prevalentie van seksueel misbruik. Van 13% (normale urologische kliniek) klimt de prevalentie naar 17% (universiteitskliniek) naar 22-23% (universitair bekkenbodem centrum). De gemeten prevalentie bij mannelijke patiënten is 2%. Dit is lager dan de prevalentie van 8%-10% vermeld in internationale literatuur, maar vergelijkbaar met de herhaaldelijk gemeten Nederlandse prevalentie van 4% in tieners en volwassenen. Het getal van 2% kan worden verklaard door de onderzoekspopulatie, waarin de leeftijd hoger was dan 60. Mensen jonger dan 60 zijn eerder bereid om een geschiedenis van seksueel misbruik te rapporteren dan mensen die ouder zijn dan 60. Recall bias of verlegenheid over dit onderwerp door een oudere generatie kan een verklaring voor deze lage prevalentie zijn. Urologen zijn bereid om hun patiënten te vragen naar seksueel misbruik. Bijna 70% van de Nederlandse urologen vragen hun vrouwelijke patiënten altijd naar seksueel misbruik. Degenen die niet standaard vragen, doen het wel wanneer een patiënt lijdt aan buikpijn (78%) of aan urgency / frequency klachten (62%). Hoewel de Nederlandse urologen vaak vragen naar seksueel misbruik, onderschatten ze de prevalentie hiervan. Zij schatten de prevalentie op 10% of minder. In tegenstelling tot bij seksueel misbruik, vraagt slechts 6% van de urologen al hun vrouwelijke patiënten naar vrouwelijke seksueel disfunctioneren.

De meeste urologen vragen naar vrouwelijke seksueel disfunctioneren als een patiënt klaagt over pijn in de onderbuik (87%), incontinentie (76%), urgency/frequency (71%) of urineweginfecties (66%). Urologen rapporteren een behoefte aan onderwijs en opleiding over dit onderwerp. De meeste patiënten met seksueel misbruik in de voorgeschiedenis (72%) vinden het niet erg als urologen hier naar vragen. Hoewel patiënten met seksueel misbruik het niet erg vinden als er naar wordt gevraagd, geeft de helft van hen aan dat deze informatie niet relevant is voor hun uroloog. Gebrek aan kennis over de relatie tussen seksueel misbruik en urologische klachten kan een verklaring hiervoor zijn. Analyse van patiëntengegevens van onze academische bekkenbodempopulatie in Leiden toonde aan dat patiënten met seksueel misbruik significant vaker klachten hadden in meerdere domeinen van de bekkenbodem in vergelijking met patiënten zonder seksueel misbruik. Dit suggereert dat seksueel misbruik kan leiden tot meerdere aan de bekkenbodem gerelateerde klachten. In onze Canadese bekkenbodempopulatie hebben we vrouwelijke patiënten met bekkenbodempklachten vergeleken met patiënten zonder bekkenbodempklachten. In deze studie wordt aangetoond dat constipatie, seksuele disfunctie en urgency/frequency onafhankelijk van elkaar significant gecorreleerd zijn met seksueel misbruik. Zoekend naar urologische klachten in een urologische populatie werd een associatie gevonden tussen een geschiedenis van seksueel misbruik en urologische klachten, namelijk een hoger percentage plasklachten (63%), incontinentie (61%) en urineweginfecties (53%) in de seksueel misbruik groep, maar de verschillen waren niet significant in vergelijking met patiënten zonder seksueel misbruik (plasklachten 53%, incontinentie 48% en urineweginfecties 44%). Het is opmerkelijk dat patiënten met seksueel misbruik significant meer urologische klachten melden als reden voor verwijzing naar de uroloog. In een model wordt gesteld dat er twee belangrijkste wegen zijn die seksueel misbruik relateren aan urologische klachten. De eerste route verloopt via de bekkenbodem. De tweede route is de directe response van het centrale zenuwstelsel naar de blaas als reactie op stimuli. Meer onderzoek is nodig om de invloeden en de mechanismen te verklaren die verantwoordelijk zijn voor de relatie tussen een voorgeschiedenis met seksueel misbruik en urologische klachten. Aanvullend onderzoek is ook nodig om te bewijzen dat urologische klachten in relatie tot seksueel misbruik moet worden behandeld in een biologisch-psychologisch model met een combinatie van bekkenbodempfysiotherapie en psychologische behandeling. Gerandomiseerde studies moeten opgezet worden om dit concept te bewijzen. Urologen moeten niet aarzelen om te informeren naar seksueel misbruik, want het is relevante informatie voor het kiezen van de beste behandelingsopties voor de patiënt. Patiënten met seksueel misbruik vinden het geen probleem als de uroloog naar seksueel misbruik informeert.

PART VI:

APPENDIX

List of abbreviations

5-HT	5-hydroxytryptamine = serotonin
ACTH	adrenocorticotrophic hormone
BOO	bladder outlet obstruction
BPH	benign prostate hyperplasia
CNS	central nervous system
CRF	corticotrophin releasing factor
FGID	functional gastro intestinal disorders
FSD	female sexual dysfunction
GI	gastrointestinal
HPA	hypothalamic-pituitary-adrenal
IC	interstitial cystitis
IC/PBS	interstitial cystitis / painful bladder syndrom
IPPC	incontinence and pelvic pain clinic
NE	norepinephrine
OAB	overactive bladder
PeLFIs	pelvic floor inventories
PFD	pelvic floor dysfunction
PTSD	posttraumatic stress disorder
PVN	paraventricular nucleus
SA	sexual abuse
SSRI's	selective serotonin reuptake inhibitors
UWI	urinary tract infection

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Curriculum Vitae

De auteur van deze dissertatie is geboren in 1974 in het dorpje Beneden-Leeuwen (Land van Maas en Waal, Gelderland). Na het behalen van zijn HAVO (1992) en VWO-diploma (1995) op het Pax Christi College te Druten, ging hij in 1995 gezondheidswetenschappen studeren aan de universiteit van Maastricht. Na het behalen van de propedeuse stapte hij in 1996 over naar de studie biomedische gezondheidswetenschappen aan de universiteit van Nijmegen. Alwaar een jaar later de overstap plaatsvond naar de studie geneeskunde. Na het behalen van het artsexamen in December 2002, werkte hij in 2003 als arts-assistent niet in opleiding (anios) op de afdeling urologie van het Canisius Wilhelmina Ziekenhuis te Nijmegen.

De opleiding tot uroloog voltrok zich in Canisius Wilhelmina Ziekenhuis te Nijmegen (chirurgisch opleider Dr. Wout Barendregt), Leids Universitair Medisch Centrum (opleider Prof. Jaap Zwartendijk) en het HagaZiekenhuis te Den Haag (opleider Drs. Frank Froeling).

Direct na het voltooien van de specialisatie per 1-1-2010, trad hij toe tot de regiomaatschap Urologen Voor U. Een brugmaatschap met samenwerkende urologen van het St. Antonius ziekenhuis Nieuwegein-Utrecht, Diakonessenhuis Utrecht-Zeist en Zuwe Hofpoort ziekenhuis Woerden. Het merendeel van de werktijd brengt hij door als algemeen uroloog in het Zuwe Hofpoort ziekenhuis te Woerden, alwaar hij gestart is met een Mannenkliniek. Eén dag in de week houdt hij een andrologisch spreekuur in St. Antonius ziekenhuis te Nieuwegein. In 2010 haalde hij het Fellow of the European Board of Urology (FEBU) diploma en sinds 2012 is hij Fellow of the European Committee of Sexual Medicine (FECSM).

Tijdens de opleiding tot uroloog bekleedde Beck enkele bestuursfuncties, zoals voorzitter van de arts-assistenten vereniging van het Canisius Wilhelmina Ziekenhuis, bestuurslid qq van de arts-assistentenvereniging van het Leids Universitair Medisch Centrum en bestuurslid, penningmeester en later voorzitter van de Jonge Orde. De grootste bestuurlijke overwinning is het binnenhalen van de onregelmatigheidstoeslag voor artsen in opleiding in de CAO-UMC.

Jack is getrouwd met Junivère en ze hebben 3 zoons Raúl (2001), Lucas (2002) and Roan (2004).

