

Dyspareunia, Urinary Sensory Symptoms, and Incontinence Among Young Chinese Women

R. William Stones · Sabu S. Padmadas · Sufang Guo · James J. Brown · Fengmin Zhao · Bohua Li

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Abstract This study examined the prevalence of dyspareunia, urinary sensory symptoms, and urinary incontinence and explored their associations among sexually active Chinese women aged 15–34 years. Data from 3,150 women were analyzed from a survey undertaken during 2003 in 30 counties in China as part of the United Nations Population Fund Country Program. The overall prevalence of dyspareunia was 4.7%. Urinary pain, burning or frequency was reported by 8.5%, 6.2% reported urinary incontinence, and 2.3% reported both sets of urinary symptoms. The prevalence of urinary incontinence, both alone and in combination with sensory symptoms, increased in a linear manner with age. Dyspareunia was associated with early sexual debut, primary level of education, and membership of minority ethnic communities. Urinary sensory symptoms and incontinence were more common among those reporting early sexual debut, those with less schooling, and women engaged in agricultural

and manual unskilled occupations. Urinary incontinence was more common among women who had had a previous vaginal delivery compared to nulliparous women. Dyspareunia was strongly associated with the presence of urinary symptoms, particularly among those with both sensory symptoms and incontinence (26.8%). Nearly a quarter of women who had dyspareunia had sought treatment but fewer had done so for urinary incontinence. Dyspareunia and urinary symptoms show distinct but overlapping patterns of association with demographic variables. The findings indicate unmet need for assessment and advice about these symptoms in women's reproductive health programs.

Keywords Dyspareunia · Urinary incontinence · Women · China

Introduction

Recurrent genital pain associated with sexual activity, or dyspareunia, is a common symptom in women but may not lead to care seeking owing to shyness or lack of access to reproductive health services with appropriate privacy and sympathetic staff (Binik, 2005; Heim, 2001). Prevalence studies in different parts of the world have provided a range of estimates: 7% among 728 urban Moroccan women (Kadri, McHicki, & McHakra, 2002) and 58% among women seeking infertility treatment in urban India (Jain, Radhakrishnan, & Agarwal, 2000). In a population based sample survey of American women aged 18–59 ($N = 1479$), sexual pain was reported by 15% (Laumann, Paik, & Rosen, 1999). Pain was more common among younger and less educated women. Another population based study in India based on the National Family Health Survey reported a prevalence of 12.6%, which was particularly high among newly married

R. W. Stones · S. S. Padmadas · J. J. Brown
Southampton Statistical Sciences Research Institute,
University of Southampton,
Southampton, England

S. Guo · F. Zhao
National Centre for Women and Children's Health,
China Centre for Disease Control,
Beijing, PR China

B. Li
China Population and Development Research Centre,
Beijing, PR China

R. W. Stones (✉)
Obstetrics and Gynaecology (815), University of Southampton,
Princess Anne Hospital,
Southampton SO16 5YA, United Kingdom
e-mail: r.w.stones@soton.ac.uk

young women (Padmadas, Stones, & Matthews, 2006). Data from North America and Europe highlight the associations among urinary incontinence, urinary sensory complaints, pelvic floor disorders, and dyspareunia (Barber, Visco, Wyman, Fantl, & Bump, 2002; Gordon et al., 1999; Handa, Harvey, Cundiff, Siddique, & Kjerulff, 2004; Shaw, 2002). This suggests the coexistence of urinary sensory complaints and dyspareunia, which are often not properly reported or easily diagnosed, especially in less-developed settings. The likelihood of a visceral hyperalgesia following the occurrence of a urinary tract or sexually transmitted infection may exist (Meana, Binik, Khalife, & Cohen, 1997).

Reports of the prevalence and associations of dyspareunia in China are lacking despite the close scrutiny of reproduction and fertility in the context of the state led family planning program over many years. In this study, we aimed to establish the prevalence of dyspareunia symptoms among women in China. To place this symptom in context with reporting of problems with other intimate bodily functions, we also investigated urinary sensory symptoms and incontinence and their associations.

Method

Participants

This study used data from a large-scale population survey conducted by the National Population and Family Planning Commission, Ministry of Health and United Nations Population Fund (UNFPA) in the People's Republic of China.

The survey was conducted in September 2003 and covered 30 counties from three different regions of China, selected purposively on the basis of planned future participation in reproductive health programs under the auspices of UNFPA. The survey design included a stratified multi-stage sample of women aged 15–49 years. The 30 project counties defined a population of townships. These were stratified into the three regions of China (Eastern, Central, Western) and then by residence (rural/urban). Within a region, 35 townships were selected and the sample was split between the urban and rural strata, proportional to the population of women aged 15–49 years subject to a minimum urban sample of seven townships. To select the townships within strata, they were ordered by county population size and Gross Domestic Product (GDP). The sample was then selected by systematic random sampling with probabilities proportional to the population of women aged 15–49 years within each township. Within a township, four communities were selected from a list ordered by urban/rural and the GDP, again using systematic random sampling with probabilities proportional to the population of women aged 15–49 years within each community. At the final stage, a systematic random sample

of 20 women was selected from a list ordered by age of all women aged 15–49 years within each selected community. This yielded a sample of 8,400 women (2,800 women per region and 80 women from each of the 105 sampled townships).

The women's survey collected information on both married and unmarried women from 8,383 households. The number of currently married women in the survey was 7,076. Of these, this study considered 3,150 currently married sexually active women who were between 15–34 years at the time of survey. The selection of this age group was to restrict the analysis on young women who are in their prime reproductive period where sexual activity is generally high. The subgroup of the sample was also skewed towards women who were at this upper age limit because of selection of only currently married women in the analysis. The mean age of participants in this subgroup was 29.3 years (SD, 3.6). The mean age at marriage for all currently married women was 21.8 years (SD, 2.6) whereas for the selected 3,150 women aged 15–34 years the mean was 21.7 years (SD, 2.4). Questionnaire items covered background and demographic characteristics, current health status, knowledge and practice in the area of reproductive health, and knowledge of reproductive health services. The participation rate was nearly 98%. Data on reproductive health problems were collected only from currently married women. The details of the survey methods have been reported elsewhere (Li et al., 2004).

The interviews were conducted in Chinese and by trained female investigators. The investigators were particularly trained to clarify the question if participants find it difficult to answer. The feedback from the investigators was positive in that most participants understood the question without any problem. All interviews were conducted after obtaining informed consent. For the present analysis, data were processed anonymously, for which ethical approval was not required. Furthermore, all participants were given clear advice that they could decline to take part in the interview or stop participation in the event of any distress.

Measures

Information about dyspareunia and urinary symptoms was included in the reproductive health services section of the questionnaire. Regarding dyspareunia, the investigators asked currently married women, "During the last six months, did you experience pain in the abdomen or vagina during sexual intercourse?" The nature of response was binary (yes/no). The survey did not ask women about the frequency (recurrence) of pain or distress. Therefore, the definition of dyspareunia was based on the reported symptoms (complaint) and not based on a clinical or psychiatric diagnosis, which are limitations of this study. Another problem with the definition was that the question concerning dyspareunia asked

about experiences of pain in abdomen or vagina but did not distinguish between these regions. The presence of urinary sensory symptoms was defined on the basis of women's reports regarding problems with pain, a burning sensation while urinating or frequent micturition. Women were also asked about urinary leaking while coughing or straining. Laboratory confirmation of possible urinary tract infection was not undertaken.

Statistical analysis

Descriptive cross tabulations of the data with chi-square analyses were used to examine the possible associations of reproductive health problems and the characteristics of participants. Four outcome variables were considered: dyspareunia, urinary sensory symptoms, urinary incontinence, and the simultaneous experience of both urinary sensory symptoms and incontinence. The background characteristics examined included women's current age, age at sexual debut, marital duration, previous delivery experience, the educational attainment of the woman and her spouse, ethnicity, residence, and employment. The magnitude and direction of the influence of these characteristics on the outcome variables were further examined using multiple logistic regression models. Odds ratios and 95% confidence intervals for the estimates were reported. In preliminary testing, we excluded multicollinearity among predictor variables before including them in regression models. Finally, associations between dyspareunia and urinary complaints were examined using chi-square tests.

Results

Among the 3,150 currently married participants aged 15–34 years, 4.7% reported dyspareunia. With regard to urinary complaints, 8.4% reported pain, burning or frequent urination, 6.1% reported urinary incontinence, and 2.3% reported both sets of symptoms (Fig. 1). Only 0.6% of women had all three sets of symptoms simultaneously. The proportion with dyspareunia was slightly higher among women aged 25–29 years whereas urinary sensory symptoms were less common in the same age group (Fig. 2). The prevalence of urinary incontinence, both alone and in combination with sensory symptoms, increased in a linear manner with age.

Table 1 shows the variables associated with dyspareunia and urinary complaints. Dyspareunia symptoms were common among women who had any early sexual debut (below 20 years), those who had only primary education, and those belonging to ethnic minority and socially deprived communities. Urinary complaints (pain/burning sensation) were significantly associated age at first sex, education, residence and occupation of participants. Spousal education was significantly related to incontinence alone or both urinary pain

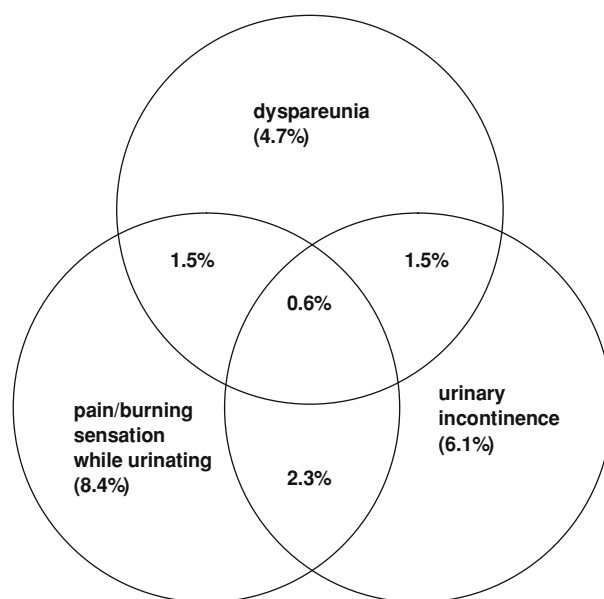


Fig. 1 Venn diagram showing the prevalence and grouping of dyspareunia and urinary complaints (weighted data)

and incontinence. Urinary incontinence symptoms were significantly associated with previous delivery experience.

The association between these complaints and participant characteristics was further examined using regression models, in which age at sexual debut rather than duration of marriage was included along with current age. Additionally, we considered variables such as previous delivery experience, education, residence, ethnicity, and occupation of women in the regression models. The results were consistent with the associations found in the bivariate analysis described above, although some of the selected variables were not statistically significant (Table 2).

Women who had experienced early sexual debut were 40–60% more likely to report dyspareunia or urinary sensory symptoms ($p < .05$). Urinary incontinence was considerably more common among older women ($p < .01$). Those with primary level schooling were significantly more likely to have reported all three sets of symptoms compared to more educated women. The odds of reporting dyspareunia were considerably higher among women belonging to minority ethnic communities ($p < .001$).

Although it is not possible to infer causality among symptoms, their possible association was examined with chi-square tests. Women's reporting of urinary sensory symptoms and dyspareunia were strongly associated (Table 3). More than 25% of participants with urinary incontinence had dyspareunia as well. These associations were statistically significant in likelihood ratio tests.

Of those who had dyspareunia, 26.4% ($n = 148$) had sought treatment. The corresponding figure for urinary sensory symptoms was 29.6% ($n = 267$) and 23.2% ($n = 194$) for urinary incontinence. Of those who reported both

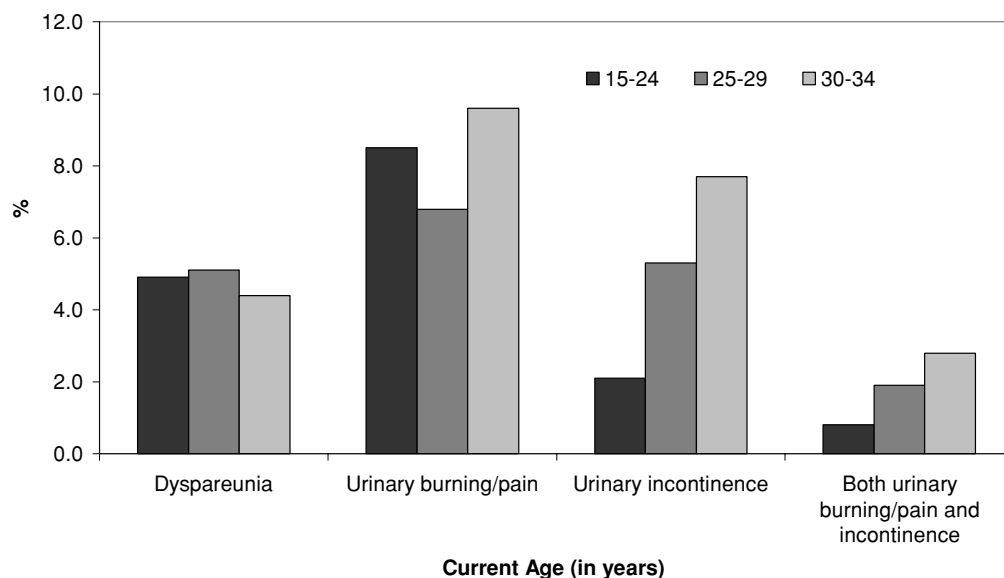


Fig. 2 Dyspareunia and urinary sensory symptoms by women's age

urinary sensory symptoms and incontinence, 29.6% ($n = 71$) had sought treatment.

Discussion

We have estimated population level prevalence and identified factors associated with three sets of intimate urogenital symptoms among young Chinese women. There could have been non-specific bias in reporting of symptoms in this survey, as in all population surveys that do not include biomarkers; however, our observation of a different pattern of reporting for different symptoms suggests that true differences were captured. It is possible that, owing to the sensitive nature of the questions posed, a proportion of symptomatic women might have given a negative response. If so, the prevalence reported here may be an underestimate. Conversely, our results might be overestimated if women have reported symptoms of a trivial nature or a short duration (e.g., transient discomfort following vaginal childbirth) (Barrett et al., 1999). Nonetheless, we consider this unlikely in the Chinese context owing to the general reluctance among this population to discuss intimate bodily symptoms (Pearson, 1995).

We have shown associations between dyspareunia and urinary incontinence, both alone and in combination with sensory symptoms. Dyspareunia was associated with early sexual debut, lower levels of education, and membership in minority ethnic communities. The ethnic minority or the non-Han groups are socially and economically deprived communities in China who generally have poorer access to health services. The prevalence of reproductive tract infections is also reported to be quite high among ethnic minorities (Xia, Liao, He, Choi, & Mandel, 2004). Urinary sensory symptoms and incontinence were more common among those

reporting early sexual debut, those with less schooling experiences, and women engaging in agricultural and manual unskilled occupations. Although it is difficult to interpret these findings, one could argue that the association between early entry into sexual unions and dyspareunia probably explain women's lack of appropriate knowledge about sexuality and reproduction. This lack of awareness could be more pronounced especially among participants who belonged to minority communities and those without any proper education. It is plausible that the reported symptoms are reflections of true experiences among women from socially and economically deprived communities where little is talked about sexuality. Also, these women might prioritize the treatment seeking to general health problems than per se on those related to sexual health. Conversely, educated women probably do not want to talk about their sexual health problems in the surveys for reasons of privacy as seen in many population surveys in the western societies. Urinary incontinence was more common among women who had had a previous vaginal delivery compared to nulliparous women. Dyspareunia was strongly associated with the presence of urinary symptoms, particularly among those with both sensory symptoms and incontinence.

Nearly a quarter of women who had dyspareunia had sought treatment but fewer had done so for urinary incontinence. Of those who had not received any treatment, it is likely that they might have had experienced a high degree of burning, incontinence, and dyspareunia. The culture of covertness and shyness in discussing sexuality might explain why a large proportion of women who had these symptoms did not seek treatment. The findings of this study were consistent with another study conducted in rural China which reported that a significant proportion of women with

Table 1 Women's characteristics associated with reported experiences of dyspareunia and urinary symptoms

Characteristics	Dyspareunia	Urinary symptoms (%)			No. of women
		Pain/burning sensation	Incontinence	Both pain/burning and incontinence	
All	4.7	8.5	6.2	2.3	3150
Age at first sexual union					
20–24	4.3	7.9	5.7	2.0	2326
25–35	3.3	7.8	4.2	2.1	335
<20	7.4	11.9	9.6	3.7	489
<i>p</i>	.007	.014	.001	.068	
Time spent in union (years)					
5–9	4.5	7.2	6.2	2.4	1229
10+	5.0	11.6	9.4	3.4	955
<5	4.7	6.9	2.9	1.0	966
<i>p</i>	ns	.001	.001	.003	
Previous delivery experience					
Vaginal	4.8	8.7	6.8	2.5	2689
c-section	4.6	7.3	3.4	1.5	261
Nulliparous	4.0	7.5	1.0	0.5	200
<i>p</i>	ns	ns	.001	ns	
Women's education					
None	2.8	10.7	7.9	4.5	178
Junior high school	4.3	7.4	4.8	1.5	1506
Senior high school +	3.4	6.0	4.4	1.2	500
Primary completed	6.3	11.1	8.8	3.6	966
<i>p</i>	.024	.001	.001	.001	
Spousal education					
None	5.3	13.2	15.8	10.5	38
Junior high school	4.5	8.6	6.5	2.5	1799
Senior high school +	3.9	6.5	4.1	0.9	690
Primary completed	6.1	10.0	6.9	2.6	623
<i>p</i>	ns	.099	.006	.001	
Women's residence					
Rural	4.7	9.1	6.6	2.5	2345
Urban	4.6	6.7	4.8	1.6	805
<i>p</i>	ns	.037	.072	ns	
Women's ethnicity					
Han	4.1	8.4	6.1	2.3	2650
Other	8.0	9.0	6.6	2.2	500
<i>p</i>	.001	ns	ns	ns	
Women's occupation					
Agriculture	4.7	10.1	7.3	2.8	1442
Housework/none	4.7	6.9	5.9	2.0	831
Manual unskilled	5.4	8.3	5.3	1.9	588
Service/professional	3.1	5.2	3.1	1.0	289
<i>p</i>	ns	.008	.034	ns	

Note. *p*-values shown are based on chi-square analysis. ns: non-significant (unweighted data).

self-reported symptoms of reproductive morbidity went mostly untreated (Kaufman & Jing, 2002).

Neuroscience research has provided evidence for overlap of sensory mechanisms in the urogenital and gastrointestinal systems, termed viscerovisceral and viscerosomatic convergence (Berkley, 1993). Animal experimental work (Berkley, Cason, Jacobs, Bradshaw, & Wood, 2001) has provided possible explanations for the clinical observation of

patients presenting with pelvic or abdominal disease, such as endometriosis, but proving on further assessment to have vaginal hyperalgesia. A complicating factor is that while dyspareunia may have a psychosexual basis in some, in others it is due to a specific disease. Symptoms of irritable bowel syndrome are often reported by women presenting with chronic pelvic pain (Butcher, 1999; Selfe, Matthews, & Stones, 1998); others may have a bladder excessively

Table 2 Odds ratios [95% CI] showing the likelihood of dyspareunia and urinary symptoms controlling for selected characteristics (*n* = 3150)

Characteristics	Dyspareunia			Urinary symptoms					
	OR	95% CI	<i>p</i>	Pain/burning sensation			Incontinence		
				OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Age at first sexual union (years)									
20–24	1.0			1.0			1.0		
25–35	0.8	[0.4, 1.5]	ns	1.1	[0.7, 1.7]	ns	0.8	[0.4, 1.4]	ns
<20	1.6	[1.0, 2.3]	.036	1.4	[1.0, 1.9]	.046	1.5	[1.1, 2.2]	.021
Current age (years)									
30–34	1.0			1.0			1.0		
25–29	1.2	[0.8, 1.7]	ns	0.7	[0.5, 1.0]	.030	0.7	[0.5, 1.0]	.058
<25	1.1	[0.6, 2.0]	ns	0.9	[0.6, 1.4]	ns	0.3	[0.1, 0.6]	.002
Previous delivery experience									
Normal	1.0			1.0			1.0		
c-section	1.2	[0.6, 2.2]	ns	1.0	[0.6, 1.7]	ns	0.7	[0.3, 1.3]	ns
Nulliparous	0.9	[0.4, 1.9]	ns	1.1	[0.6, 2.0]	ns	0.3	[0.1, 1.1]	.070
Women’s education									
Junior high school	1.0			1.0			1.0		
Senior high school +	0.8	[0.4, 1.5]	ns	1.0	[0.6, 1.7]	ns	1.3	[0.7, 2.3]	ns
Primary completed	1.4	[1.0, 2.1]	.037	1.5	[1.1, 1.9]	.012	1.6	[1.1, 2.2]	.010
None	0.5	[0.2, 1.3]	ns	1.3	[0.8, 2.2]	ns	1.3	[0.7, 2.3]	ns
Women’s residence									
Rural	1.0			1.0			1.0		
Urban	1.2	[0.7, 1.8]	ns	0.7	[0.6, 1.4]	ns	1.0	[0.6, 1.5]	ns
Women’s ethnicity									
Han	1.0			1.0			1.0		
Other	2.0	[1.4, 3.0]	.001	1.1	[0.8, 1.5]	ns	1.1	[0.7, 1.6]	ns
Women’s occupation									
Agriculture	1.0			1.0			1.0		
Housework/none	1.0	[0.6, 1.5]	ns	0.7	[0.5, 1.0]	.056	1.0	[0.7, 1.4]	ns
Manual unskilled	1.3	[0.8, 2.1]	ns	1.0	[0.7, 1.4]	ns	0.9	[0.5, 1.3]	ns
Service/professional	0.9	[0.3, 2.1]	ns	0.6	[0.3, 1.3]	ns	0.5	[0.2, 1.2]	ns
Constant (β)	-3.448		.001	-2.367		.001	-2.659		.001
-2 log-likelihood	1162			1798			1401		

Note. ns: non-significant.

sensitive to chemical stimulation, suggesting interstitial cystitis (Parsons et al., 2002; Wesselmann, 2001).

The substantial co-existence of urinary sensory symptoms and dyspareunia identified in the present study would

be compatible with the hypothesis that, in a proportion of women experiencing dyspareunia, there is an underlying visceral hyperalgesia that has arisen spontaneously or following a sensitizing episode such as urinary tract or sexually

Table 3 Bivariate association between dyspareunia and urinary symptoms

Urinary symptoms	Dyspareunia experience (%)		<i>N</i>	χ^2	<i>p</i>
	Yes	No			
Pain/burning sensation					
No	3.5	96.5	2883	108.5	.001
Yes	17.6	82.4	267		
Incontinence					
No	3.7	96.3	2956	117.0	.001
Yes	20.6	79.4	194		
Both pain/burning and incontinence					
No	4.2	95.8	3079	78.9	.001
Yes	26.8	73.2	71		

transmitted infection (Meana et al., 1997). An association between urinary sensory symptoms and dyspareunia was reported by Laumann et al. (1999) and similar findings were identified in analysis of Indian population data (Padmadas et al., 2006). However, we also showed some common but some differential patterns of statistical associations when the additional symptom of urinary incontinence was considered. This suggests that these symptom reports are not simply manifestations of a common pathologic process. Clinical research is required to characterize subgroups with different patterns of symptom reporting to establish the extent of sub-clinical urinary tract infection in the general population, and to document bladder function more formally, either using symptom diaries or urodynamic investigation. In a U.S. study of women with dyspareunia, a comprehensive clinical and psychological assessment was emphasized as the most important means of distinguishing subgroups within a very heterogeneous condition (Meana et al., 1997).

In a context of a Chinese public health policy now aiming to address the full range of reproductive health problems, the physical and psychosocial dimensions of dyspareunia and urinary symptoms require specific attention from service providers and researchers in order to address the substantial unmet need identified in this study. It is worth noting here that modern contraceptive use in China is nearly 90% and of these more than 75% use methods that need direct clinic attention (Li et al., 2004). This provides an opportunity, to both clients and health providers, to address women's sexual health issues within the existing reproductive and family planning services. In particular, there is a need for providers to enable women to come forward and discuss these problems openly.

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References

- Barber, M. D., Visco, A. G., Wyman, J. F., Fantl, J. A., & Bump, R. C. (2002). Continence Program for Women Research Group. Sexual function in women with urinary incontinence and pelvic organ prolapse. *Obstetrics and Gynecology*, *99*, 281–289.
- Barrett, G., Pendry, E., Peacock, J., Victor, C., Thakar, R., & Manyonda, I. (1999). Women's sexuality after childbirth: A pilot study. *Archives of Sexual Behavior*, *28*, 179–191.
- Berkley, K. J. (1993). On the significance of viscerosomatic convergence. *APS Journal*, *2*, 239–247.
- Berkley, K. J., Cason, A., Jacobs, H., Bradshaw, H., & Wood, E. (2001). Vaginal hyperalgesia in a rat model of endometriosis. *Neuroscience Letters*, *306*, 185–188.
- Binik, Y. M. (2005). Should dyspareunia be retained as a sexual dysfunction in DSM-V? A painful classification decision. *Archives of Sexual Behavior*, *34*, 11–21.
- Butcher, J. (1999). Female sexual health problems II: Sexual pain and sexual fears. *British Medical Journal*, *318*, 110–112.
- Gordon, D., Groutz, A., Sinai, T., Wiezman, A., Lessing, J. B., David, M. P., et al. (1999). Sexual function in women attending a urogynecology clinic. *International Urogynecology Journal of Pelvic Floor Dysfunction*, *10*, 325–328.
- Handa, V. L., Harvey, L., Cundiff, G. W., Siddique, S. A., & Kjerulff, K. H. (2004). Sexual function among women with urinary incontinence and pelvic organ prolapse. *American Journal of Obstetrics and Gynecology*, *191*, 751–756.
- Heim, L. J. (2001). Evaluation and differential diagnosis of dyspareunia. *American Family Physician*, *63*, 1535–1544.
- Jain, K., Radhakrishnan, G., & Agarwal, P. (2000). Infertility and psychosexual disorders: relationship in infertile couples. *Indian Journal of Medical Sciences*, *54*, 1–7.
- Kadri, N., McHicki, A. K. H., & McHakra, T. S. (2002). Sexual dysfunction in women: Population based epidemiological study. *Archives of Women's Mental Health*, *5*, 59–63.
- Kaufman, J., & Jing, F. (2002). Privatisation of health services and the reproductive health of rural Chinese women. *Reproductive Health Matters*, *10*, 108–116.
- Laumann, E., Paik, A., & Rosen, R. C. (1999). Sexual dysfunction in the United States: Prevalence and predictors. *Journal of the American Medical Association*, *281*, 537–544.
- Li, B., Brown, J., Guo, S., Padmadas, S. S., Zhao, F., Stones, W., et al. (2004). *UNFPA/China Reproductive Health/Family Planning Project—CPR/03/P01 Baseline Survey, Technical Report*. China Population & Development Research Centre, National Centre for Women and Children Health, Chinese Centre for Disease Control and Prevention, and Southampton Statistical Sciences Research Institute, UK.
- Meana, M., Binik, Y. M., Khalife, S., Bergeron, S., Pagidas, K., & Berkley, K. J. (1997). Dyspareunia: More than bad sex. *Pain*, *71*, 211–212.
- Meana, M., Binik, Y. M., Khalife, S., & Cohen, D. R. (1997). Biopsychosocial profile of women with dyspareunia. *Obstetrics and Gynecology*, *90*, 583–589.
- Padmadas, S. S., Stones, R. W., Matthews, Z. (2006). Dyspareunia and urinary sensory symptoms in India: Population based study. *Journal of Sexual Medicine*, *3*, 114–120.
- Parsons, C. L., Dell, J., Stanford, E. J., Bullen, M., Kahn, B. S., & Willems, J. J. (2002). The prevalence of interstitial cystitis in gynecologic patients with pelvic pain, as detected by intravesical potassium sensitivity. *American Journal of Obstetrics and Gynecology*, *187*, 1395–1400.
- Pearson, V. (1995). Goods on one which loses: Women and mental health in China. *Social Science and Medicine*, *41*, 1159–1173.
- Selfe, S. A., Matthews, Z., & Stones, R. W. (1998). Factors influencing outcome in consultations for chronic pelvic pain. *Journal of Women's Health*, *7*, 1041–1048.
- Shaw, C. (2002). A systematic review of the literature on the prevalence of sexual impairment in women with urinary incontinence and the prevalence of urinary leakage during sexual activity. *European Urology*, *42*, 432–440.
- Wessellmann, U. (2001). Interstitial cystitis: A chronic visceral pain syndrome. *Urology*, *57*, 32–39.
- Xia, D., Liao, S. S., He, Q. Y., Choi, K. H., & Mandel, J. S. (2004). Self-reported symptoms of reproductive tract infections among rural women in Hainan, China: Prevalence rates and risk factors. *Sexually Transmitted Diseases*, *31*, 643–649.