Sexual Problems of Urban Women in Croatia: Prevalence and Correlates in a Community Sample

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Aim
To assess the prevalence and correlates of female sexual problems in a community sample in the Croatian capital of Zagreb.

Method
The study was based on a self-administered postal survey of 1,170 women 20-60 years old, living in Zagreb. The return rate was 48% (n = 547). Participants not sexually active in the last month (n = 119), and those who self-identified as homosexual or bisexual (n = 31), were excluded from the analyses. The final sample consisted of 384 women. The average age of participants was 38.2 years. Four categories of sexual problems were addressed: inhibited sexual desire, inhibited sexual arousal, inhibited orgasm, and sexual pain disorders.

Results
Of the heterosexual women sexually active in the last month, 33.8% experienced sexual problems, with inhibited orgasm being the most frequent problem. Comorbidity was recorded among 10.7% of the participants. Older age was positively related to inhibited desire ($\beta = 0.11, P = 0.05$) and inhibited arousal ($\beta = 0.25, P = 0.002$), whereas it was negatively related to inhibited orgasm and sexual pain disorders ($\beta = -3.73, P = 0.001$ and $\beta = -6.98, P = 0.01$, respectively). Length of relationship was positively related to inhibited desire ($\beta = 1.17, P = 0.016$). Religious morality was positively related to inhibited desire, inhibited arousal, and sexual pain disorders ($\beta = 0.43, P < 0.001$, $\beta = 0.52, P = 0.001$, and $\beta = 0.11, P = 0.044$, respectively). Intimate communication was negatively related to inhibited desire, inhibited arousal, and inhibited orgasm ($\beta = -2.18, P < 0.001$, $\beta = -2.67, P < 0.001$, and $\beta = -0.21, P = 0.003$, respectively); and body image was negatively related to inhibited arousal and sexual pain disorders ($\beta = -1.17, P = 0.026$ and $\beta = -0.38, P = 0.042$, respectively).

Conclusion
Sexual health disturbances among urban Croatian women are frequent. Their prevalence calls for incorporating sexual health issues in the national public health agenda. Multifaceted character of sexual problems is important for adult sexuality education and counseling.

Epidemiological studies suggest that sexual problems are widespread, notably among women of all ages (10-15). According to recent reviews, community samples estimate a range from 10% to 52% of men and 25% to 63% of women with sexual problems (10, 14). New clinical treatment options and steadily advancing field of sexual therapy created new demand for more sophisticated and precise assessment of the prevalence of sexual problems in the general population (9, 12). Unfortunately, standardized measurements and a consensus on research guidelines and opera-
tional definitions are still lacking, in spite of the widely accepted DSM-IV (Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition) definitions of sexual disorders (16). Consequently, actual prevalence figures are not clear. The fact that clinical studies – presently gaining in popularity due to the increased funding from the pharmaceutical industry (8,15,17) – offer different prevalence figures from non-clinical research, such as male erectile dysfunction and female sexual pain disorders which are usually overrepresented in clinical samples, further complicates the situation (18,19). Also, clinical and non-clinical studies often differ in the conceptualization of sexual difficulties (sexual dysfunction vs sexual problem) (15). Usually, non-clinical studies provide wider understanding of the factors influencing sexual health and its disturbances.

This paper is based on the first, albeit limited, research study on female sexual problems in Croatia (20). Carried out in 2001, the study aimed at providing initial information on the prevalence of sexual problems and related risk factors. Since the existing studies point to a multidimensional character of sexual health (10,15,21-23), the risk factors should be conceptually divided into several categories. In addition to being associated with general health status and affected by medication used for treating chronic illnesses (particularly mental disorders) (10,24,25) and substance abuse (13), sexual problems are often inseparable from relationship characteristics and related emotions (15,21), as well as from sociocultural influences such as sexual myths and religious norms (21,22). Starting with the assumption that sexual problems arise from a complex interaction of intrapersonal, interpersonal, and sociocultural factors, the aim of this paper is to elaborate on this web of influences. Identifying specific risk factors, some of them possibly culture-specific, could be important for the implementation of a future sexual health education program.

Participants and Methods

Participants

In 2001, a total of 1,170 women, residents of Zagreb, were enrolled in the cross-sectional study on sexual difficulties. Each of 117 students of social sciences and humanities enrolled in the cross-sectional study on sexual difficulties assisting with the project was asked to recruit 10 female participants. The students’ role was to make an initial contact with conveniently chosen women of the target population (20-60 years old women living in the capital city; family members were excluded) asking them if they would be willing to participate in a brief sexual health survey. If the reply was positive, student-assistant would hand out a questionnaire and a pre-stamped envelope with our return address. Participants were asked to fill in the questionnaire when alone and mail it back as soon as possible. All assistants were briefly trained how to approach the potential respondents and were instructed to make sure that all recruited women had permanent residence in the capital city. In addition, the students received detailed instructions specifying the recruiting procedure and the required number of women in each of the 4 age cohorts: 20-29, 30-39, 40-49, 50-60. The sample was stratified by age according to 1991 census data for the city of Zagreb (26). Since age affects the efficiency of self-administered questionnaires (27), we limited the age range to 60.

The return rate of 48% (n=547), common for postal surveys, was almost identical to the one reported in a recent UK study (28). The average age (± standard deviation) in the sample was 34.3 ± (11.6); 42% (n=230) of participants were between 20 and 29 years of age, 22.9% (n=125) were between 30 and 39, 20.8% (n=114) between 40 and 49, and 14.3% (n=78) between 50 and 60. Among the respondents, 38.5% (n=176) were married. Most women had high-school (n=184, 33.6%) or college education (n=358, 65.4%). According to census data, our sample differs from the target population both in terms of age and level of education (Table 1). In regard to socioeconomic status, almost half of the participants (n=268, 49.5%) stated that their household status

| Table 1. Age structure and education in planned and realized sample of female residents of Zagreb aged 20-60 years |
| Sample % (n) |
| Characteristic | planned* | realized (n=547) |
| Age (years): | | |
| 20-29 | 25.5 | 42.0 (230) |
| 30-39 | 27.8 | 22.9 (125) |
| 40-49 | 22.9 | 20.8 (114) |
| 50-60 | 24.2 | 14.3 (78) |
| Education: | | |
| primary | 30.5 | 0.9 (5) |
| secondary | 50.9 | 33.6 (184) |
| college/university | 18.6 | 65.4 (358) |

*Target population: women 20–60 year old, residents of Zagreb (according to 1991 census data).
should be considered average, with 10.0% (n = 54) living below and 40.4% (n = 219) living above it.

Participants not sexually active in the last month (n = 119), and those who self-identified as homosexual or bisexual (n = 31), were excluded from the analyses, as well as 13 respondents who did not answer the questions regarding sexual activity and/or sexual orientation. The final sample consisted of 384 women.

**Questionnaire and Measures**

The questionnaire consisted of 34 questions measuring various aspects of sexual function (desire, arousal, achieving orgasm, sexual pain disorders, initiation and frequency of sexual contacts, sexual satisfaction), relationship characteristics (length of relationship, communication about sexual matters, assessment of partner’s sexual satisfaction), attitudes (4 items measuring the acceptance of religious morality), and individual characteristics (age, education, financial status, marital status, number of children, sexual orientation, and body image). The sexual function part of the questionnaire was based on the Brief Index of Sexual Functioning for Women (29-31) and theoretically anchored in DSM-IV classification of sexual disorders (32). Respondents were repeatedly instructed in the text that all questions regarding sexual functioning pertain to the period of the last 30 days. Such a short period of observation was selected in order to minimize recall bias. The questionnaire was pre-tested for readability and comprehension on 10 women of various age and educational background.

For the purpose of prevalence assessment, inhibited sexual desire was defined as having no sexual thoughts, fantasies, or dreams. Inhibited arousal was defined as “never” or “rarely” experiencing sexual arousal during the intercourse. Inhibited orgasm was defined as having problems reaching orgasm “always” or “often,” whereas dyspareunia was defined as experiencing painful penetration “always” or “often.”

In multiple regression analyses, more robust multi-item indices were used as the indicators of the likelihood of experiencing sexual problems, except in the case of orgasmic difficulties where a high number of missing data recorded in the questions on the frequency of orgasm during various sexual activities made index construction impossible. Accordingly, the likelihood of inhibited orgasm was assessed with the following question: “How often have you experienced difficulties reaching orgasm?” Respondents used a 5-item scale for recording answers, ranging from 1 – “never” to 5 – “each time.”

The likelihood of inhibited sexual desire was expressed as summed scores of 8 items measuring desire for kissing, masturbation, mutual masturbation, cuddling, foreplay, or anal sex. The scales ranged from 1 – “never” to 5 – “all of the time” and were reverse coded so that higher scores indicated a higher probability of hypoactive sexual desire. The reliability of this composite indicator was satisfactory ($\alpha = 0.81$).

The likelihood of inhibited arousal was assessed by summing scores of 7 items measuring arousal felt at kissing, sexual fantasies, masturbation, mutual masturbation, oral, vaginal, or anal sex. The scales ranged from 1 – “not once” to 5 – “each time” and were reversely coded so that higher scores point to a higher probability of inhibited arousal. The indicator had satisfactory reliability ($\alpha = 0.88$).

The likelihood of sexual pain disorders was expressed as summed scores of the following 5 items: bleeding after sex, vaginal dryness, painful penetration, unpleasant vaginal tightness, and headache after sex. The scales ranged from 1 – “never” to 5 – “each time I had sex,” with higher scores indicating a higher probability of painful sex. This indicator had only moderate reliability ($\alpha = 0.69$).

Regarding control variables, the length of relationship – an indicator of the stability of relationship – was expressed as the number of months spent with the current partner. The number of children, an indicator of the time and energy devoted to parental responsibilities, was dichotomized into “no children” and “one or more children.” The index of the acceptance of religious morality was the mean score on the following 4 variables, which loaded highly (>0.69) on a single factor: “In terms of sexuality, religious moral prescriptions are a reliable guide,” “One should avoid premarital sex,” “The church rightly considers masturbation a sin,” “When planning parenthood, one should use natural methods and not contraceptives.” The range was 1-5, with higher values representing greater acceptance of religious morality. The scale had satisfactory reliability.
Partner communication regarding one’s sexual needs and preferences, an indicator of intimacy and a proxy for the quality of relationship, was assessed with a 4-item frequency scale ranging from “never” to “often.” As an indicator of respondent’s body image we used the following question: “Generally speaking, how satisfied are you with your bodily appearance?” A 5-item scale, ranging from “completely dissatisfied” to “completely satisfied,” was used for recording answers.

### Statistical Analysis

Chi-square test was used to test differences in the prevalence of sexual problems among different age groups. Multiple linear regression (OLS) was used to assess the correlates of sexual difficulties. All the analyses were carried out using SPSS 11.0 (SPSS Inc., Chicago, IL, USA) statistical software package.

### Results

Overall, 130 sexually active participants (33.8%) reported at least one problem in the preceding month; 89 women (23.1%) reported a single problem, 33 women (8.6%) reported two problems, 7 women (1.8%) reported three problems, and only one respondent reported all four problems. The most frequent sexual problem in our sample was inhibited orgasm. During the preceding month, 18.4% of participants had “often” or “always” problems with reaching orgasm. Orgasmic difficulties were followed by inhibited arousal (12.1%) and lack of desire (11.2%). The least prevalent sexual problem was functional dyspareunia. Age was associated with specific sexual difficulties, but not with overall vulnerability to sexual health disturbances (Table 2). Younger women experienced fewer problems with desire ($P<0.001$) and sexual arousal ($P<0.003$) than older women. At the same time, younger women reported more problems with reaching orgasm ($P=0.053$) and more frequent dyspareunia ($P=0.030$).

Four multiple linear regression models (Table 3) showed that, the likelihood of inhibited sexual desire increased with age and length of relationship. Since age and length of relationship were highly correlated ($r=0.80$; $P<0.001$), we carried out two additional analyses in order to rule out collinearity effect. In the first analysis, age was omitted from the list of predictors and length of relationship in the second. The analyses confirmed the significant independent effect of both variables. Inhibited desire was also correlated with intimate communication (negative association) and religious morality (positive association).

The age and acceptance of religious morality increased the likelihood of inhibited arousal, whereas intimate communication (talking about your sexual needs and experiences with the partner) and positive body image decreased it.

Orgasmic difficulties, the most frequent problem in our sample, were negatively associated with age and intimate communication. Finally, sexual pain disorders was correlated with age, positive body image, and religious morality.
Whereas the association is negative in the case of age and positive body image, religious morality increases the likelihood of sexual pain disorders.

**Discussion**

The purpose of our analysis was to provide the first insights into female sexual health disturbances in Croatia. Sexual difficulties were found to be frequent among the residents of the Croatian capital. Every third woman in the sample experienced one or more sexual difficulties in the month preceding the survey. The finding that 10.7% of the surveyed women experienced two or more difficulties confirms that comorbidity is an important characteristic of sexual health disturbances (12,13,33). Similar to other studies (13,18,34), the most prevalent sexual problem in our sample was inhibited orgasm. In spite of the methodological difficulties in cross-national comparisons (35), such as inconsistent definitions and differences in recollection period and respondents’ age range, prevalence rates of inhibited orgasm in four national studies (19,33,36,37), ranging from 7% in Denmark to 24% in the US, position our findings somewhere in the middle.

Our study has several serious limitations. Since we were not able to control the procedure of recruitment of participants, the final sample is a convenience sample (over-representing young and college-educated women), which does not permit generalizations. Although an analysis of non-respondents was not possible, our sample was certainly biased toward women comfortable with discussing their sexuality. In order to maximize the response rate, the questionnaire was kept brief, which precluded a more detailed analysis of the correlates of female sexual problems. In that respect, our report should be considered a pilot study. Taking into account that higher education was shown to be negatively correlated with female sexual health disturbances (14), the overrepresentation of highly educated women in our sample suggests that the prevalence of female sexual disturbances in the general population of Croatia could be significantly higher than the one reported here.

The second part of our study focused on the variables associated with sexual difficulties. Age was found to be a significant predictor of all four categories of sexual problems, pointing not only to the importance of general health status and (most probably) certain constitutional factors, but also to the effect of experience or sexual maturity. The likelihood of inhibited desire and arousal increased with age whereas the likelihood of experiencing sexual pain disorders and problems achieving orgasm decreased with it. The latter was somewhat unexpected, since ageing is usually associated with a decrease in sexual function (38,39). Our results suggest a more complex relationship between age and sexuality (9,13,15,37). On the one hand, ageing entails physical and psychological changes that can affect sexual functioning, either negatively (deteriorating health) or positively – through sexual experience and the disappearance of the fear of pregnancy. On the other hand, ageing is inseparable from some external (social) factors such as the popular belief (sometimes even a cultural norm) that ageing makes people asexual, as well as the fact that many women lose their sexual partners due to shorter male life expectancy.

Relationship dynamics, measured by length of relationship and frequency of intimate communication, play a significant role in all but sexual pain disorders. Our findings confirm a decline of sexual desire as a function of relationship duration (19,37), but emphasize an important role of intimacy in maintaining sexual health – pointing out a complex association between relationship characteristics and sexual functioning. Trust, the sense of being accepted and the feelings of connectedness foster sexual openness and expressiveness particularly in women (40). When things go wrong sexually, intimacy enables partners to discuss the emerging problem and find a solution before it spirals into a chronic problem. Maintaining the quality of relationship could thus be an efficient way of preventing sexual health disturbances. It remains unclear, though, whether it is sexual openness, sharing, and intimacy which lead to orgasmic efficiency or vice versa (or, perhaps, both).

Cultural norms, reflected in the issues concerning body image and religious convictions, also played an important role. Low satisfaction with one’s body was correlated with inhibited arousal and sexual pain disorders. In spite of the fact that causal links are impossible to establish in a cross-sectional study, dissatisfaction with bodily appearance may interfere with the ability to relax during the intercourse. Not feeling comfortable enough makes focusing on sexual stimuli more difficult, raising the risk of arousal problems. It is well
known that insufficient arousal is often the primary cause of sexual pain disorders (41). Sexually restrictive religious morality was associated with three out of four sexual problems. Rather than religiousness itself, as a detailed recent study found no effect of religion on sexual satisfaction (42), the internalization of restrictive moral norms could be responsible for the reduction in the ability to focus on sexual feelings and sensations, at least in women. Internalized, such norms instill feelings of guilt, thus effectively blocking sexual expression and proactive approach to sexual pleasure.

One of the independent variables, having children, was not found significant in our analyses. A possible explanation points to a wide age range in the sample and the fact that having grown up children (as in the case of older participants) should be irrelevant for mother’s sexual life. To test this hypothesis we carried out a separate regression analysis only on women between 30 and 40 years of age, whose children still require significant amount of parental investment. The findings did not support the hypothesis that having children who require intensive mothering increases the likelihood of sexual health disturbances.

In spite of the outlined limitations of the study, we believe that our findings have important implications for adult sexuality education and counseling. Additionally, they should be instrumental in advancing professional and public awareness in Croatia of the fact that sexual health issues are inseparable from the quality of life (25,43,44).

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