

Emotional Intelligence and Its Association with Orgasmic Frequency in Women

Andrea V. Burri, MSc, Lynn M. Cherkas, PhD, and Tim D. Spector, MD

King's College London St. Thomas' Hospital, Twin Research and Genetic Epidemiology Department, London, UK

DOI: 10.1111/j.1743-6109.2009.01297.x

ABSTRACT

Introduction. Up to 30% of women suffer from female orgasmic disorder (FOD)—the second most common type of female sexual dysfunction. FOD has been acknowledged to be multifactorial and recent research has implicated the importance of psychosocial risk factors.

Aim. The aim of this study is to investigate whether normal variations in emotional intelligence—the ability to identify and manage emotions of one's self and others—are associated with orgasmic frequency during intercourse and masturbation. To our knowledge, this is the first such study in a large unselected population.

Methods. A total of 2035 women from the TwinsUK registry completed questionnaires relating to emotional intelligence and sexual behavior. Global emotional intelligence was measured using the Trait Emotional Intelligence Questionnaire—Short Form (TEIQue-SF). Orgasmic frequency was assessed using two self-constructed questions.

Main Outcome Measures. Using Spearman's rank correlation and quartile logistic regression, we investigated whether variations in emotional intelligence are associated with female orgasmic frequency during intercourse and masturbation.

Results. Emotional intelligence was not associated with the potential confounders of age and years of education, nor did we find a significant association between emotional intelligence and potential risk factors for FOD such as age, body mass index, physical or sexual abuse, or menopause. We found emotional intelligence to be positively correlated with both frequency of orgasm during intercourse ($r = 0.13$, $P < 0.001$) and masturbation ($r = 0.23$, $P < 0.001$). Women in the lowest quartile of emotional intelligence had an approximate twofold increased risk of infrequent orgasm (Intercourse = odds ratio [OR] 2.3, 95% confidence interval [CI] 1.4–3.9; Masturbation = [OR] 1.8, [CI] 1.3–2.5).

Conclusion. Low emotional intelligence seems to be a significant risk factor for low orgasmic frequency. Consideration of this behavioral risk factor may need to be incorporated into research into FOD and possible treatment approaches. **Burri AV, Cherkas LM, and Spector TD. Emotional intelligence and its association with orgasmic frequency in women. J Sex Med **;**:**_**.**

Key Words. Female Sexual Dysfunction; Emotional Intelligence; Female Orgasm Disorder; Aetiology; Orgasmic Frequency

Introduction

Female sexual dysfunction (FSD) is an often underestimated but common problem in the general community with serious effects on women's quality of life. The term FSD comprises disorders related to sexual desire, arousal, orgasm, and sexual pain. In 2000, a consensus conference was held, aiming at developing consistent guidelines for clinical evaluation and treatment of FSD [1]. Further revisions were presented at the 2nd

International Consultation on Sexual Medicine: Men and Women's Sexual Dysfunction and are currently being tested for clinical validity [2,3]. According to this classification system, female orgasmic disorder (FOD), the second most frequently reported women's sexual problem after low desire, is defined as: "Recurrent or persistent difficulty, delay in or absence of attaining orgasm after sufficient sexual stimulation and following normal sexual arousal, which causes personal distress."

Based on a number of studies, up to two in five women (39%) never or infrequently achieve orgasm through intercourse [4–6]. Unfortunately, the absence of dependable population-based data, combined with a lack of standard uniformly applied study designs, assessment methods, and definitions of FSD, has made it difficult to give accurate prevalence estimates of FOD [7]. The same is true for research on the pathoetiology underlying FOD, which has resulted in contradictory results [8].

Today, FOD is regarded as a multifactorial phenomenon, rarely caused by a single factor, although one may predominate [9,10]. Knowledge about the pathoetiology combines anatomical, physiological, biological, medical, and psychosocial factors and, lately, several genetic epidemiological studies have started to successfully explore the pathogenesis of FOD and possible genetic involvement [11–13]. However, according to several population-based studies, FOD appears to be more commonly associated with psychological, emotional, and social problems (e.g., depression, sexual abuse, relationship factors, psychosexual immaturity) than with physiological factors [14–16].

The construct of emotional intelligence was first introduced by Salovey and Mayer, who derived emotional intelligence from the broader construct of social intelligence, and defined it as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (p. 189) [17]. In today’s literature, we find several different but generally convergent conceptualizations of the emotional intelligence construct. Bar-On, an expert and pioneer in the field of emotional intelligence, uses a much broader definition of the construct, which includes adaptive capacities and abilities to control impulses and cope with stress, as well as intrapersonal and interpersonal intelligence (e.g., emotion-related self-perceptions, emotion management, empathy) [18]. Research on emotional intelligence suggests that people differ in how they experience emotions, how able they are to differentiate between them, and how much emotional information they can utilize and process, intrapersonally and also interpersonally [19]. These capacities—which have been proven to differ between people—may have a direct impact on women’s sexual functioning, and on her ability to communicate her expectations and desires to her partner.

Despite awareness of the importance of psychogenic factors on the development of FOD, to our knowledge, no studies have yet investigated whether sexual dysfunction might be associated with normal variations in emotional intelligence.

Aims

The aim of this study is to investigate whether normal variations in emotional intelligence are associated with orgasmic frequency during intercourse and masturbation in a nonclinical, unselected population of females. This may be an important further step in identifying behavioral risk factors that may be associated with orgasmic disorder, which in turn should improve the diagnosis, identification of possible subgroups, and treatment of FOD.

Methods

Subjects

All subjects were volunteer female twins drawn from the TwinsUK London registry, which includes twin pairs from all over the country [20]. All twins in the registry were recruited through national media campaigns and from other twin registers. Questionnaire data were available on a total of 2,035 female twin individuals. The study was approved by the St. Thomas’ Hospital research ethics committee and all twins provided informed consent. The twins have been shown to be representative of an age-matched general population in terms of disease and prevalence of lifestyle characteristics. The only difference found was for weight, where identical twins were slightly lighter and had a smaller variance than non-identical twins and singletons [21].

Questionnaires

An anonymous self-completion questionnaire assessing sexual behavior, health, lifestyle, and demographic information was sent to 8,418 female twins in the registry (aged between 18 and 83 years, with a mean age of 50 years). Subjects were asked questions about general sexual behavior and functioning (e.g., age at first intercourse; number of partners; physical, emotional, and sexual abuse,) and, more specifically, on frequency of achieving orgasm during intercourse and masturbation. For a detailed description of the sample characteristics, see Table 1. Subjects who were no longer sexually active were asked to recall frequency of orgasm

Table 1 Demographic characteristics of women in the analyzed sample

	Mean	SD
N = 2,035		
Age (in years)	53	13.9
Education (in years)	10.5	3.2
BMI	24.8	4.2
	N	%
Marital status		
Single	119	6
Married	1,236	67
In a relationship, living with partner	131	7
Divorced	148	8
Widowed	105	6
In a relationship, not living with partner	105	6
Pregnancy		
Cesarian	327	16
Hysterectomy	120	6
368	18	
Menopausal stage		
Premenopausal	525	27
Menopausal	243	12
Postmenopausal	958	47
Unsure	285	14
Physical abuse		
143	7	
Sexual abuse		
139	7	

BMI = body mass index; SD = standard deviation.

during the time that they were sexually active. The women responded to two questions about the frequency with which they reached orgasm during sexual intercourse and during masturbation, giving their responses on a 7-point Likert scale from “never” to “always” (7) (see Table 2 and Figure 1).

In a follow-up survey, the twins were sent a general behavior questionnaire consisting of several validated questionnaires, including the *Trait Emotional Intelligence Questionnaire—Short Form* (TEIQue-SF) [22]. The 30-item questionnaire was designed to efficiently measure global trait emotional intelligence and is based on the long form of the TEIQue, which has been used in

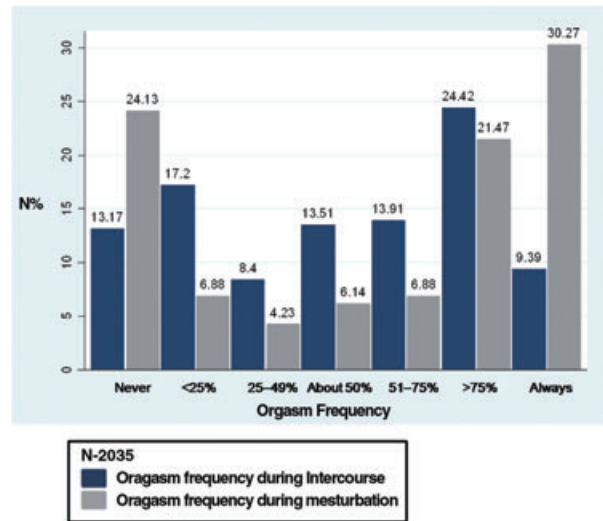


Figure 1 Self-reported orgasm frequency by category during intercourse and masturbation.

numerous studies trying to assess the emotion-related aspects of personality [23]. Extensive factor analysis performed on the 15 subscales of the TEIQue has resulted in four interrelated factors: *Emotionality* (“Expressing my emotions with words is not a problem for me”), *Self-Control* (“I usually find it difficult to regulate my emotions”), *Sociability* (“I’m normally able to get into someone’s shoes and experience their emotions”), and *Well-Being* (“On the whole, I’m pleased with my life”). To ensure adequate internal consistencies and broad coverage of the sampling domain of the construct in the TEIQue-SF, two items from each of the 15 subscales of the TEIQue were selected for inclusion, based primarily on their correlations with the corresponding total subscale scores [22]. The TEIQue-SF was shown to have high levels of

Table 2 Self-reported orgasm frequency and emotional intelligence mean scores by category during intercourse and masturbation

“Overall, how frequently do you experience an orgasm during intercourse?” (N = 2,035)				“Overall, how frequently do you experience an orgasm during masturbation?” (N = 2,035)					
Response scale—ordinal rating		N	%	EI score		N	%	EI score	
				Mean	SE			Mean	SE
Never	1	268	13.17	148.8	1.5	491	24.13	151.4	1.1
<25%	2	350	17.20	152.4	1.2	140	6.88	149.0	1.8
25-49%	3	171	8.40	151.8	1.8	86	4.23	151.2	2.2
About 50%	4	275	13.51	152.8	1.3	125	6.14	150.5	2.0
51-75%	5	283	13.91	152.7	1.5	140	6.88	153.1	2.0
>75%	6	497	24.42	156.8	1.1	437	21.47	153.1	1.2
Always	7	191	9.39	157.1	1.8	616	30.27	157.4	0.9
Total		2,035	100.00	153.4	0.5	2,035	100.00	153.4	0.5

EI = emotional intelligence; SE = standard deviation.

internal consistency (Cronbach's $\alpha > 0.80$). Validity evidence can be found in Petrides and Furnham [22]. Items were responded to on a 7-point Likert scale ranging from "Completely Disagree" (number 1) to "Completely Agree" (number 7). Confidentiality was assured and because the two questionnaires were sent separately as part of wider sets of questions, subjects were unaware of any specific hypotheses.

Main Outcome Measures

In this study, we considered the total emotional intelligence score resulting from summing the 30 items of the TEIQue-SF (with items 16, 2, 18, 4, 5, 7, 22, 8, 10, 25, 26, 12, 13, 28, 14 being inversely scored) and treated it as a continuous trait [22]. Frequency in achieving orgasm during intercourse or masturbation was analyzed as two independent ordinal variables (1–7).

Statistical Analysis

Spearman's rank correlation coefficient was used to examine the relationship between emotional intelligence score and the ordinal variable representing the frequency of orgasm during masturbation and intercourse. We used a square root transformation to normalize our right-skewed data, a prerequisite to perform parametric statistic tests. To examine the relationship between emotional intelligence and frequency of orgasm during intercourse and masturbation, we then regressed only the extreme ends of women who never (category 1) and always (category 7) achieved orgasm during intercourse and masturbation, against the lowest and highest quartile of the emotional intelligence global score. All tests were two-tailed. Non-independence of twin pairs was dealt with by using the cluster function for familial relatedness which is a form of conditional logistic regression. We used a *t*-test to assess differences in emotional intelligence between total responders and partial responders. Frequencies in orgasm between the two groups were compared using two-sample tests of proportions. For all analyses, a *P* value less than 0.05% or odds ratios (OR) with a 95% confidence interval (CI) not including "1" were considered statistically significant, unless stated otherwise. All analyses were performed using STATA software (StataCorp. 2007. Stata Statistical Software: Release 10. College Station, TX: StataCorp LP).

Results

Of the 8,418 subjects, 4,030 returned the sexual behavior questionnaire (48% response rate); 4,337

returned the general behavior questionnaire including the TEIQue-SF (52% response rate). Overall, 2,035 participants returned both the sexual behavior and the general behavior questionnaire fully completed (Mean age = 53, standard deviation = 13.9 years; age range = 21–82 years), equivalent to one in four (24%) of the total sample to whom the questionnaires were sent. All of the 2,035 women included in this study were heterosexual and had engaged in vaginal intercourse at least once in their lives. There was no significant difference in emotional intelligence ($P > 0.1$) and the frequency of orgasm during intercourse and masturbation in total responders compared with partial responders ($P > 0.1$). The numbers and percentages of subjects within each category of frequency of orgasm during intercourse and masturbation and the mean emotional intelligence score by category are summarized in Table 2.

The mean age across all seven orgasm frequency categories was similar (ranging from 50.8 to 54.1 years). We checked whether risk factors commonly associated with female orgasmic dysfunction were significantly associated with either the frequency of orgasm during intercourse or masturbation in our study population by performing univariate logistic regression analysis. The results are expressed as OR and *P* values in Table 3. Having undergone a cesarean section was significantly associated with a lower frequency of orgasm during masturbation, while a childhood history of physical abuse was significantly associated with low orgasmic frequency during intercourse. However, as neither risk factor was significantly associated with emotional intelligence scores (results not shown), they were not included as confounders in subsequent analyses. No significant association with the frequency of achieving orgasm during intercourse or masturbation was found for other potential confounding factors such as age, body mass index, marital status, menopausal status, ever having been pregnant, hysterectomy, and childhood history of sexual abuse. Furthermore, we did not find any significant association between the global emotional intelligence score and the years of education (OR 1.73; CI 0.51–5.34; $P > 0.1$).

The average emotional intelligence score was 153.49 (standard error 0.5; CI 152.42–154.53). The internal consistency data among the 30 items of the TEIQue-SF for our sample ($\alpha = 0.88$) was comparable to the previously reported values ($\alpha > 0.80$) [22]. As expected, the total score of emotional intelligence was found to be positively correlated with both frequency of orgasm during

Table 3 Univariate logistic regression analysis of potential risk factors for orgasmic infrequency in the study population. The OR value compares the specific hazard ratio for low FI and FM compared to high FI and FM. Significant results are shown in bold

	FI (N = 2,035)		FM (N = 2,035)	
	Odds ratio*	P value	Odds ratio*	P value
Age	0.99 (0.98–1.00)	0.21	0.99 (0.99–1.00)	0.25
BMI	0.99 (0.94–1.01)	0.72	0.99 (0.95–1.01)	0.73
Marital Status	1.51 (1.05–2.18)	0.27	1.03 (0.86–1.25)	0.73
Pregnancy	0.45 (0.17–1.14)	0.09	1.04 (0.52–2.06)	0.91
Cesarian	0.67 (0.25–1.79)	0.43	2.33 (1.15–4.71)	0.02
Hysterectomy	0.94 (0.28–3.17)	0.92	0.72 (0.31–1.70)	0.45
Menopausal status	1.13 (0.61–2.08)	0.70	1.01 (0.41–1.16)	0.98
Physical abuse	0.26 (0.06–1.03)	0.06	1.76 (0.62–4.91)	0.28
Sexual abuse	1.61 (0.48–5.36)	0.44	0.61 (0.27–1.37)	0.24

*The odds ratio value compares the specific hazard ratio for low FI and FM compared to high FI and FM with a 95% confidence interval. FI = frequency of orgasm during intercourse; FM = frequency of orgasm during masturbation; OR = odds ratio.

intercourse ($r = 13$, $P < 0.001$) and frequency of orgasm during masturbation ($r = 23$, $P < 0.001$), which means that with higher emotional intelligence level, the frequency with which women experience orgasm increases (Table 4). Notably, the correlation between emotional intelligence and frequency of orgasm during masturbation was higher than the correlation between emotional intelligence and frequency of orgasm during intercourse. Table 4 also shows the results of the logistic regression of the extreme lowest and highest categories of frequency of orgasm during intercourse and masturbation against the lowest and highest quartiles of the global emotional intelligence score. These results confirmed the correlation analysis, demonstrating that lower emotional intelligence increased the risk for orgasmic frequency during both intercourse and masturbation by a factor of 2.3 ($P < 0.001$).

Discussion

To our knowledge, these findings show for the first time an association between female orgasmic fre-

quency and normal variations in emotional intelligence. The positive correlation between emotional intelligence and the frequency of orgasm during masturbation and intercourse leads us to conclude that a high emotional intelligence level contributes to the ability to achieve orgasm more frequently. This does not appear to be mediated by the confounders measured in our sample. However, these results may not necessarily be extrapolated to FOD, as we did not use a standardized definition of FOD nor did we measure the component of distress. We found, as expected, that the proportion of women who report always experiencing orgasms was greater during masturbation compared with sexual intercourse (Table 1). The correlation between frequency of orgasm during masturbation and emotional intelligence was higher compared with the correlation with orgasm during intercourse and emotional intelligence. These findings appear to contradict results from previous studies reporting that partner involvement was a noted preference for many women [24,25]. It suggests some sort of context specificity on a woman's ability to achieve an orgasm. A

Table 4 Results of Spearman's correlation for the whole sample and of logistic regression analysis on the highest and lowest quartile of the emotional intelligence scores and the frequency of having orgasm during intercourse and masturbation

	Spearman's correlation (N = 2,035)		Logistic regression (lowest vs. highest quartile) (N = 2,035)	
	Emotional intelligence [†]	Frequency of orgasm during intercourse	OR (95% CI)	P value
Frequency of orgasm during <i>intercourse</i> [‡]	0.13*	0.23*	2.3 (1.37–3.99)	<0.001
Frequency of orgasm during <i>masturbation</i> [‡]	0.23*		1.8 (1.30–2.56)	<0.001

* $P < 0.001$, Bonferroni.

[†]The global emotional intelligence (EI) score was attained by summing up the values of all 30 items of the TEIQue-SF. Subjects rated their agreement or disagreement to on a 7-point Likert scale ranging from "Completely Disagree" (number 1) to "Completely Agree" (number 7). EI was treated as a continuous variable.

[‡]When answering the questions on orgasm frequency during intercourse (FI) and masturbation (FM), subjects were given a 7-point Likert scale ranging from "Never" (number 1), to "Always" (number 7). FI and FM were treated as an ordinal variable. CI = confidence interval; OR = odds ratio.

woman's feeling of control or the capacity to integrate physical stimulation with fantasy may as well facilitate orgasm as may the better knowledge of one's own body. The level of the partner's sexual function or dysfunction and his ability to meet the woman's wishes is an additional variable, which is irrelevant for the woman achieving an orgasm through masturbation.

Our finding that previous cesarian sections and physical abuse seem to be significant risk factors for less frequent orgasms supports evidence from numerous previous studies on woman's sexual health. Research on intimate partner violence—physical, sexual, or psychological harm by a current or former intimate partner—has shown to be associated with FSD [26]. Studies of the impact of method of child delivery on women's sexual health found problems related to sexual function to be quite common after subsequent cesarian section [27].

Several constructs closely related to emotional intelligence have previously been shown to exert an influence on female sexual functioning. In a recent study, Harris and her coworkers from our group found that female coital orgasmic frequency seems to be associated with normal variations in dimensions of personality, including introversion, emotional instability, and lack of openness to new experience [28]. Conceptually, also similar to emotional intelligence is the construct "alexithymia"—difficulty in recognizing, identifying, and communicating emotions, reduced fantasy capacity, and an externally oriented cognitive style—which has been reported to be strongly and inversely related with emotional intelligence [29]. Several studies have found alexithymia in patients with general sexual disorders and paraphilias and a negative correlation with the frequency of penile–vaginal intercourse in women [30,31]. These findings, together with the significant association found in this study between emotional intelligence and orgasmic frequency, support former research evidence indicating an important role of psychosocial factors on the pathogenesis of FSD [14,15].

As in all studies of this nature, there are limitations to the research design. Our response rate was relatively low compared with other medical surveys but respectable compared with other sex surveys. However, a low response rate does not necessarily mean that the results are biased and the lack of significant differences in emotional intelligence and frequency of orgasm between total responders and partial responders does not support a potential bias. There may be a bias in

recalling frequency of orgasm for those women currently sexually inactive. The fact that we used a convenience sample of volunteers instead of a random sample of the general population may have some impact on the generalizability of the results. However, the rate of women reporting infrequent to complete absence of orgasm (approximately 30%) corresponds to the prevalence of orgasmic disorder found in current literature and implies that the results obtained in this study are not biased and may be generalizable, as our twin cohort has already been shown to be representative of the general population [21]. We also accounted for the family structure of the twins in our analysis.

Future studies should consider excluding participants with a previous psychotherapeutic experience. This may be methodologically crucial because of possible influences of psychotherapy on emotional regulation and intelligence [32]. Furthermore, there are a range of other potential confounders that we did not measure in our study that have been shown to exert an influence on the frequency of orgasm, including relationship imbalances, relationship length, intimacy, lack of trust, partner's sexual performance, partner's sexual dysfunction, stress, and negative body image [33,34]. Regarding the assessment of our phenotype "low orgasm frequency," we would ideally have used a standardized and detailed questionnaire. Use of a validated questionnaire like the Female Sexual Function Index may provide more specific measures and might help in ascertaining the phenotype FOD more accurately and identify possible subgroups [35]. Also, it is quite possible that emotional intelligence could have an impact on FOD by altering the level of distress.

Conclusion

Considering emotional intelligence as a potential risk factor that contributes to the cause and maintenance of FOD can potentially provide useful information for clinical use, promoting the role of cognitive–behavioral approaches to its treatment. The concept of emotional intelligence and the regulation of emotions could furthermore be useful for future prevention and education programs aimed at the enhancement of sexual health.

Acknowledgments

The authors acknowledge financial support from the Wellcome Trust; the Department of Health via the

National Institute for Health Research comprehensive Biomedical Research Centre award to Guy's and St. Thomas' NHS Foundation Trust in partnership with King's College London; the Chronic Disease Research Foundation; and Pfizer studentship grant to A.B.

Corresponding Author: Andrea V. Burri, MSc, Department of Twin Research and Genetic Epidemiology, King's College London, St. Thomas' Hospital, Westminster Bridge Road, SE1 7EH, London, UK. Tel: +44 (0) 2071881505; Fax: 44 (0) 2071886718; E-mail: Andrea.burri@kcl.ac.uk

Conflict of Interest: The first author has a PhD grant provided by Pfizer.

Statement of Authorship

Category 1

(a) Conception and Design

Andrea V. Burri

(b) Acquisition of Data

Andrea V. Burri; Lynn M. Cherkas; Tim D. Spector

(c) Analysis and Interpretation of Data

Andrea V. Burri; Tim D. Spector

Category 2

(a) Drafting the Article

Andrea V. Burri

(b) Revising It for Intellectual Content

Tim D. Spector; Lynn M. Cherkas

Category 3

(a) Final Approval of the Completed Article

Tim D. Spector

References

- 1 Basson R, Berman J, Burnett A, Derogatis L, Ferguson D, Fourcroy J, Goldstein I, Graziottin A, Heiman J, Laan E, Leiblum S, Padma-Nathan H, Rosen R, Seagraves K, Seagraves RT, Shabsigh R, Sipski M, Wagner G, Whipple B. Report of the international consensus development conference on female sexual dysfunction: Definitions and classifications. *J Urol* 2000;163:888–93.
- 2 Basson R, Leiblum S, Brotto L, Derogatis L, Fourcroy J, Fugl-Meyer K, Graziottin A, Heiman JR, Laan E, Meston C, Schover L, van Lankveld J, Schultz WW. Revised definitions of women's sexual dysfunction. *J Sex Med* 2004;1:40–8.
- 3 Basson R, Althof S, David S, Fugl-Meyer K, Goldstein I. Summary of the recommendations on sexual dysfunctions in women. *J Sex Med* 2004;1:24–34.
- 4 Nicolosi A, Glasser DB, Kim SC, Marumo K, Laumann EO. Sexual behaviour and dysfunction and help-seeking patterns in adult age 40–80 years in the urban population of Asian countries. *BJU Int* 2005;95:609–14.
- 5 Pongholzer A, Roehrllich M, Racz U, Temml C, Madersbacher S. Female sexual dysfunction in a healthy Austrian cohort: Prevalence and risk factors. *J Urol* 2005;174:1364.
- 6 Spector IP, Carey MP. Incidence and prevalence of the sexual dysfunctions: A critical review of the empirical literature. *Arch Sex Behav* 1990;19:389–408.
- 7 Hayes RD, Dennerstein L, Bennett CM, Fairley CK. What is the "true" prevalence of female sexual dysfunctions and does the way we assess these conditions have an impact? *J Sex Med* 2008;5:777–87.
- 8 Hayes RD, Dennerstein L, Bennett CM, Sidat M, Gurrin LC, Fairley CK. Risk factors for female sexual dysfunction in the general population: Exploring factors associated with low sexual function and sexual distress. *J Sex Med* 2008;5:1681–93.
- 9 Zemishlany Z, Weizman A. The impact of mental illness on sexual dysfunction. *Adv Psychosom Med* 2008;29:89–106.
- 10 Clayton A, Ramamurthy S. The impact of physical illness on sexual dysfunction. *Adv Psychosom Med* 2008;29:70–88.
- 11 Dunn KM, Cherkas LF, Spector TD. Genetic influences on variation in female orgasmic function: A twin study. *Biol Lett* 2005;22:260–3.
- 12 Witting K, Santilla P, Rijdsdijk F, Varjonen M, Stern P, Johansson A, von der Pahlen B, Alanko K, Sandnabba NK. Correlated genetic and non-shared environmental influences account for the comorbidity between female sexual dysfunctions. *Psychol Med* 2008;26:1–13.
- 13 Zion IZ, Tessler R, Cohen L, Lerer E, Raz Y, Bachner-Melman R, Gritsenko I, Nemanov L, Zohar AH, Belmaker RH, Benjamin J, Ebstein RP. Polymorphisms in the dopamine D4 receptor gene (DRD4) contribute to individual differences in human sexual behavior: Desire, arousal and sexual function. *Mol Psychiatry* 2006;11:782–6.
- 14 Dunn KM, Croft PR, Hackett GI. Association of sexual problems with social, psychological, and physical problems in men and women: A cross sectional population survey. *J Epidemiol Community Health* 1999;53:144–8.
- 15 Heiman JR. Sexual dysfunction: Overview of prevalence, etiological factors, and treatments. *J Sex Res* 2002;39:73–8.
- 16 Brody S, Costa RM. Vaginal orgasm is associated with less use of immature psychological defense mechanisms. *J Sex Med* 2008;5:1167–76.
- 17 Salovey P, Mayer JD. Emotional intelligence. *Imagination Cogn Pers* 1990;9:185–211.
- 18 Bar-On R. The era of the "EQ": Defining and assessing emotional intelligence. The 104th Annual Convention of the American Psychological Association, Toronto, 1996.

- 19 Winter KA, Kuiper NA. Individual differences in the experience of emotions. *Clin Psychol Rev* 1997;17:791–821.
- 20 Spector TD, Williams FM. The UK Adult Twin Registry (TwinsUK). *Twin Res Hum Genet* 2006;9:899–906.
- 21 Andrew T, Hart DJ, Snieder H, de Lange M, Spector TD, MacGregor AJ. Are twins and singletons comparable? A study of disease-related and lifestyle characteristics in adult women. *Twin Res* 2001;4:464–77.
- 22 Petrides KV, Furnham A. The role of trait emotional intelligence in a gender-specific model of organizational variables. *J Appl Soc Psychol* 2006;36:552–69.
- 23 Petrides KV, Furnham A. Technical manual of the Trait Emotional Intelligence Questionnaire (TEIQue). London: University of London, Institute of Education; 2004.
- 24 Darling CA, Davidson JK, Jennings DA. The female sexual response revisited: Understanding the multiorgasmic experience in women. *Arch Sex Behav* 1991;20:527–40.
- 25 Davidson JK, Darling CA. Self-perceived differences in the female orgasmic response. *Fam Pract Res J* 1989;8:75–84.
- 26 Handa V. Sexual function and childbirth. *Semin Perinatol* 2006;30:253–6.
- 27 Coker A. Does physical intimate partner violence affect sexual health?: A systematic review. *Trauma Violence Abuse* 2007;8:149–77.
- 28 Harris JM, Cherkas LF, Kato BS, Heiman JR, Spector TD. Normal variations in personality are associated with coital orgasmic infrequency in heterosexual women: A population-based study. *J Sex Med* 2008;5:1177–83.
- 29 Parker JD, Taylor GJ, Bagby RM. The relationship between emotional intelligence and alexithymia. *Pers Individ Dif* 2001;30:107–15.
- 30 Kirsch LG, Becker JV. Emotional deficits in psychopathy and sexual sadism: Implications for violent and sadistic behavior. *Clin Psychol Rev* 2007;27:904–22.
- 31 Brody S. Alexithymia is inversely associated with women's frequency of vaginal intercourse. *Arch Sex Behav* 2003;1:73–7.
- 32 Taylor GJ, Bagby RM, Parker JDA. Disorders of affect regulation: Alexithymia in medical and psychiatric illness. Cambridge: Cambridge University Press; 1997.
- 33 Qureshi S, Ara Z, Qureshi VF, Al-Rejaie SS, Aleisa AM, Bakheet SA, Al Shabanah OA, Qureshi MR, Fatima R, Qureshi MF, Al-Bekairi AM. Sexual dysfunction in women: An overview of psychological/psychosocial, pathophysiological, etiological aspects and treatment strategies. *Phcog Rev* 2007;1:41–8.
- 34 Schnarch D. *Passionate marriage: Keeping love and intimacy alive in committed relationship*. New York: Owl Books; 1997.
- 35 Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino, R Jr. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.