
Introduction: New Developments in the Area of Sexual Dysfunction(s)

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Abstract

New developments in the area of sexual dysfunction, e.g. epidemiology and pharmacological treatment, are reviewed. Areas where new developments/changes are needed, such as diagnosis of sexual dysfunction and research methodology, are also briefly discussed.

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Sex, together with eating and sleeping, is one of the basic drives. Impairment of this drive/sexual functioning can have a profound impact on the person's quality of life and other aspects of functioning. Sexual behavior represents a very complex and interesting interaction of biology and psychology. Even an ostensibly simple phenomenon such as erection represents a complex interaction of the central and peripheral nervous systems modified by various psychological factors, and impacted by factors such as vascular abnormalities, various physical illnesses, aging, substance abuse and many others. Including among them, as Goldstein noted in his aptly named editorial 'In the end, "sex is complicated"' [1], is the fact that, 'sexual function and dysfunction involve the couple, which does not make sex any less complicated'. Goldstein [1] also correctly notes that we know very little about sex. It is actually surprising how little we really know, in spite of the fact that sex is an important and popular part of our life, culture, arts, ordinary talks and even everyday conversations and jokes.

The general public seems to agree that sex is an important part of their life and that sexual health is important for peoples' overall well-being. In a U.S. poll discussed by Marwick [2], among married men, 91% ranked a satisfying sex life as important, as did 84% of married women. In addition, '94% of those polled said that sexual enjoyment added to the quality of life at any age, while half said that sexual problems should not be accepted as a consequence of aging'. More than 90% of those polled in this unscientific survey also believed that unsatisfactory sex life can cause numerous

other problems such as depression or breakup of marriage. The popular belief of the importance of sexual well-being has been also confirmed in various scientific studies. For instance, Laumann et al. [3] found that subjective sexual well-being was correlated with overall happiness in both men and women in various countries.

Results of epidemiological studies suggest that impairment of sexual function, i.e. sexual dysfunction, is definitely quite frequent, and that is an important health concern [4]. According to a well-publicized U.S. study of Laumann et al. [4], sexual dysfunction is fairly prevalent in women (43%) as well as men (31%). These authors also observed that the experience of sexual dysfunction is more likely among women and men with poor physical and emotional health, and that sexual dysfunction is highly associated with negative experiences in sexual relationships and overall well-being [4]. An international study [5] yielded similar prevalence rates. For instance, lack of interest in sex and inability to reach orgasm were the most common sexual problems in women across world regions, ranging from 26 to 43%, and 18 to 41%, respectively. Interestingly, in most cases, the reported prevalence of sexual problems was higher in East Asia and Southeast Asia than in other regions of the world [5]. In spite of many methodological problems of this (e.g. low response rate, differences in recruitments of samples) and other studies (e.g. diagnostic criteria not rigorous enough), the results strongly suggest that sexual dysfunction(s) is a frequent problem throughout the world, and that there is a relatively unambiguous relationship between the frequency of dysfunction and age in both men and women [6]. Yet, I would suggest that the overall nonindustry-sponsored spending on research in this area is probably significantly less than in many areas of medicine and mental health.

Nevertheless, we have been witnessing enormous developments in the study of human sexuality during the last few decades. This area has become multidisciplinary, with urology, obstetrics and gynecology, sexology, psychology and basic sciences stepping up their efforts and interests. A new 'discipline', sexual medicine, seems to be emerging. Interestingly, the field of psychiatry appears to be less and less involved and interested in the area of human sexuality and sexual dysfunction. This trend is quite unfortunate, especially since psychiatry and neurosciences are at the crossroads of many of these disciplines and seem to be uniquely qualified and fitted to synthesize the findings from the medical and psychological disciplines.

What Are the Areas of Rapid Development and Areas/Issues That Are in Need of Development?

Treatment

The most significant developments over the last two decades have happened in the area of treatment of sexual dysfunction, more specifically treatment of erectile dysfunction and premature ejaculation. The introduction of intraurethral and intracorporeal

administration of prostaglandin E-1 for treatment of erectile dysfunction, followed by the accidental discovery of the efficacy of sildenafil, launched a new era of 'sexual pharmacology' [7]. The other two phosphodiesterase-5 inhibitors, tadalafil and vardenafil (both 'me-too' drugs) appeared soon. The phosphodiesterase-5 inhibitors have been tried in various indications in men and women. They have been found effective in erectile dysfunction of various etiologies, and in some male urological difficulties, e.g. lower urinary tract symptoms in men [8]. Since its launch in the United States in 1998, sildenafil has been approved in over 110 countries [9], and over 500 million tablets of sildenafil have been distributed worldwide by 2002 [8]. The number of studies and reports on sildenafil has been enormous – a recent (January 2008) PubMed search of sildenafil and erectile dysfunction yielded a staggering number of 1,778 references, and additional search for tadalafil and vardenafil and erectile dysfunction revealed over 700 additional references. There are more phosphodiesterase-5 inhibitors that may potentially enter the market, such as avanafil, udenafil, mirodenafil and others [10]. Similar to the results of studies of sildenafil in male erectile disorder, but less spectacular and less published, are the results of treatment studies of premature ejaculation [e.g. 11]. Some selective serotonin reuptake inhibitors such as fluoxetine, paroxetine and sertraline, and serotonergic tricyclic antidepressant clomipramine have gradually become the first-line treatment for premature ejaculation.

Unfortunately, advancements in pharmacological treatment of sexual dysfunctions in women have been less than modest. The efficacy of sildenafil was examined in female sexual arousal disorder, too. In spite of some favorable early reports from small trials, the results of large clinical trials [e.g. 12] did not confirm sildenafil's efficacy in this indication, and thus Pfizer ultimately terminated its trials of sildenafil in women. Some studies suggest efficacy of bupropion in hypoactive sexual desire disorder in premenopausal nondepressed women [13], and testosterone in postmenopausal women with hypoactive sexual desire disorder [14]. Maybe the new classes of drugs such as melanocortins [15] will be more successful in treatment of sexual dysfunction in women. The results of some preclinical trials with bremelanotide [16] suggest that this compound may be useful in the treatment of hypoactive sexual desire disorders.

The advances of treatment of sexual dysfunctions have certainly not been limited to the area of pharmacotherapy. An example of the continuous and increasing developments in the area of sex therapy is the fourth edition of Leiblum's *Principles and Practice of Sex Therapy* [17].

Sexual Dysfunction and Somatic Illness

The field of medicine has started to pay more attention to sexuality in connection to other illnesses. As Basson [18] and Basson and Schultz [19] noted, sexual sequelae of chronic somatic illnesses are quite common. Numerous endocrine, neurological,

immunological, vascular and other diseases can profoundly negatively affect sexual functioning. However, we clearly need more research in this area, especially with a focus on pathophysiology of sexual dysfunction during various chronic somatic (and mental) illnesses and treatment of sexual dysfunction associated with these illnesses.

Journals, Books

Another area of growth is scientific publications, namely scientific journals and books devoted to the topic of sexuality. The field of journals has been gradually expanding and we now have several older and newer journals devoted to sexuality and sexual dysfunction available, such as *The Journal of Sex and Marital Therapy*, *The Journal of Sexual Medicine*, *Archives of Sexual Behavior*, *Journal of Sex Research*, and *International Journal of Impotence Research*. Journals focused on human sexuality are published also in non-English-speaking countries. One such example is *Sexuologia* (*Sexology*) published by the Slovak Society for Sexology.

Numerous books focusing on various aspects of human sexuality have been published lately; examples include the mentioned volumes on sex therapy [17], and sexual pharmacology [7], or the *Handbook of Clinical Sexuality for Mental Health Professionals* [20] and *Handbook of Sexual Dysfunction* [21].

Organizations

Another sign of the increased interest in human sexuality is the growing number of professional societies in this field. Examples of these societies include:

- 1 The International Society for Sexual Medicine (secretariat@ISSM.info), which includes several regional organizations: (a) Africa Gulf Society for Sexual Medicine; (b) Asia Pacific Society for Sexual Medicine (www.apssm.org); (c) European Society for Sexual Medicine (<http://www.essm.org>); (d) Latin American Society for Sexual Medicine – Sociedad Latinoamericana de Medicina Sexual (www.SLAMSNET.org); (e) Sexual Medicine Society of North America (www.amsna.org)
- 2 International Society for the Study of Women's Sexual Health (info@isswsh.org)
- 3 International Academy of Sex Research (www.iasr.org)

Many countries have their own national organizations in the area of human sexuality. Examples include the Dutch Society for Sexology, Danish Association for Clinical Sexology (Dansk Forening for Klinisk Sexologi), Nordic Association for Clinical Sexology, German Society for Social-Scientific Sexuality Research, Indonesian Association for Sexology, Slovak Society for Sexology, and four organizations in North America: The Society of the Scientific Study of Sexuality, The American Association of Sex Educators, Counselors, and Therapists, The Society for Sex Therapy and Research, and The Sexuality Information and Education Council of the United States.

Areas That Need More Attention and Development – Diagnosis and Research Methodology

Diagnosis

The diagnostic criteria of sexual dysfunction(s) remain one of the significant weaknesses of sexology or sexual medicine. Our nosology is of poor quality [6] and quite imprecise. We are not clear on when a sexual problem becomes a sexual dysfunction [22]. We have discussed diagnostic issues [23, 24] that need to be addressed in the future discussions of the criteria of sexual dysfunction(s), such as the need for a specific duration criterion of sexual dysfunction, and whether distress should be used as a diagnostic criterion of sexual dysfunction. Further nosology/classification issues raise questions of including new diagnostic entities (e.g. persistent genital arousal disorder in women), reclassifying dyspareunia, possibly deleting sexual aversion disorder and a host of other issues [24], such as whether to classify asexuality as a sexual dysfunction [25]. The existing diagnostic criteria are definitely far from being ideal, and that certainly hinders our research and clinical practice.

Research Methodology

DeRogatis and Burnett [26] summarized some of the key methodological issues in sexual medicine research. The lack of a meaningful diagnostic system is certainly a major problem. The next very important issue is the lack of a good, widely accepted set of outcome measures. We clearly have too many scales and questionnaires, some poorly validated, some measuring too little or too much. As DeRogatis and Burnett [26] pointed out, no single measure appears clearly superior to the others. Most, if not all our studies also lack explicitly defined research populations [26]. We also need to be more precise in our definitions and taxonomy – DeRogatis and Burnett [26] suggest that we ‘can no longer afford the luxury of taxonomic imprecision, which has allowed us to treat terms like “sexual desire”, “sexual interest”, and “sexual motivation” as synonyms for an identical state. They are not. They refer to distinct, albeit overlapping, entities, a distinction which must be reflected in our clinical science.’ Last but not least, we need to develop better methods to measure clinical (vs. statistical) significance in our treatment studies.

Afterword

This volume of *Advances in Psychosomatic Medicine* presents some of the discussed new developments in the area of sexual dysfunction such as research-oriented evaluation, treatment of some of the sexual dysfunctions, the intertwining of sexual dysfunction with mental and physical illness, with substance abuse and with psychotropic medications, and last but not least, news from the area of imaging.

It is obvious that the area of human sexuality in general, and sexual dysfunction in particular, has been undergoing enormous development and advances. Hopefully,

this volume will help interested readers sort out some of the newest developments and become more interested/involved in this area.

References

- 1 Goldstein I: Editorial. In the end, 'sex is complicated'. *J Sex Med* 2007;4:523–525.
- 2 Marwick C: Survey says patients expect little physician help on sex. *JAMA* 1999;281:2173–2174.
- 3 Laumann EO, Paik A, Glasser DB, Kang J-H, Wang T, Levinson B, Moreira ED, Nicolosi A, Gingell C: A cross-national study of subjective well-being among older women and men: findings from the Global Study of Sexual Attitudes and Behaviors. *Arch Sex Behav* 2006;35:145–161.
- 4 Laumann EO, Paik A, Rosen RC: Sexual dysfunction in the United States. *JAMA* 1999;281:537–544.
- 5 Laumann EO, Nicolosi A, Glasser DB, Paik A, Gingell C, Moreira E, Wang T, for the GSSAB Investigators' Group: Sexual problems among women and men aged 40–80 years: prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *Int J Impot Res* 2005;17:39–57.
- 6 DeRogatis LR, Burnett AL: The epidemiology of sexual dysfunction. *J Sex Med* 2008;5:289–300.
- 7 Segraves RT, Balon R: *Sexual pharmacology. Fast facts.* New York, WW Norton, 2003.
- 8 Gales BJ, Gales MA: Phosphodiesterase-5 inhibitors for lower urinary tract symptoms in men. *Ann Pharmacother* 2008;42:111–115.
- 9 Osterloh IH, Riley A: Clinical update on sildenafil citrate. *Br J Clin Pharmacol* 2002;53:219–223.
- 10 Hatzimouratidis K, Hatzichristou DG: Looking to the future for erectile dysfunction therapies. *Drugs* 2008;68:231–250.
- 11 Waldinger MD: Premature ejaculation: definition and drug treatment. *Drugs* 2007;67:547–568.
- 12 Basson R, McInness R, Smith MD, Hodgson G, Koppiker N: Efficacy and safety of sildenafil citrate in women with sexual dysfunction associated with female sexual arousal disorder. *J Womens Health Gend Based Med* 2002;11:367–377.
- 13 Segraves RT, Clayton A, Croft H, Wolf A, Warnock J: Bupropion sustained release for the treatment of hypoactive sexual desire disorder in premenopausal women. *J Clin Psychopharmacol* 2004;24:339–342.
- 14 Kingsberg S, Shifren J, Wekselman K, Rodenberg C, Koochaki P: Evaluation of the clinical relevance of benefits associated with transdermal testosterone treatment in postmenopausal women with hypoactive sexual desire disorder. *J Sex Med* 2007;4:1001–1008.
- 15 Shadiack AM, Sharma SD, Earle DC, Spana C, Hallam TJ: Melanocortins in the treatment of male and female sexual dysfunction. *Curr Top Med Chem* 2007;7:137–144.
- 16 Pfau J, Giuliano F, Gelez H: Bremelanotide: an overview of preclinical CNS effects on female sexual dysfunction. *J Sex Med* 2007;4(suppl 4):269–279.
- 17 Leiblum SR (ed): *Principles and practice of sex therapy*, ed 4. New York, The Guilford Press, 2007.
- 18 Basson R: Sexuality in chronic illness. *Lancet* 2007;369:350–352.
- 19 Basson R, Schultz WW: Sexual sequelae of general medical disorders. *Lancet* 2007;369:409–424.
- 20 Levine SB (ed): *Handbook of clinical sexuality for mental health professionals.* New York, Brunner-Routledge, Taylor & Francis Books, 2003.
- 21 Balon R, Segraves RT: *Handbook of sexual dysfunction.* Boca Raton, Florida, Taylor & Francis, 2005.
- 22 Bancroft J, Loftus J, Long JS: Distress about sex: a national survey of women in heterosexual relationships. *Arch Sex Behav* 2003;32:193–208.
- 23 Balon R, Segraves RT, Clayton A: Issues for DSM-V: sexual dysfunction, disorder, or variation along normal distribution: toward rethinking DSM criteria of sexual dysfunctions. *Am J Psychiatry* 2007;164:198–200.
- 24 Balon R: The DSM criteria of sexual dysfunction: need for a change. *J Sex Marital Ther* 2008; in press.
- 25 Prause N, Graham CA: Asexuality: classification and characterization. *Arch Sex Behav* 2007;36:341–356.
- 26 DeRogatis LR, Burnett LR: Key methodological issues in sexual medicine research. *J Sex Med* 2007;4:527–537.

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