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Recognising female sexual dysfunction as an essential aspect of effective diabetes care

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ABSTRACT

The following literature review will focus on sexual dysfunction in women living with diabetes, drawing on international studies in this specialist field. The key aim of this paper is generate a greater understanding and recognition of the issues facing these women and to determine a more proactive approach to identification, consultation and potential treatment options. The main findings highlight the unique role practitioners have with women with diabetes and how to facilitate partnership working. Nurses have the most frequent contact with people living with diabetes in any healthcare system. Nurses' knowledge about sexuality in relation to diabetes should improve patient education, recognition and could signal undiagnosed or increased risk of sexual dysfunction to enable treatment so care can be optimised accordingly (Sivrikaya et al., 2014).

1. Introduction

Sex is an important part of all adult relationships and increasingly Female Sexual Dysfunction (FSD) has become more recognised as an aspect of many women's experiences, especially those living with diabetes. However, the historical paucity of research into FSD, as compared to male, is only becoming addressed more frequently in more recent years. A key reason being related to an emphasis on traditional research approaches regarding recognition of male sexual dysfunction linking to reproduction purposes whereas female sexual functioning not having this requirement (Maiorino et al., 2014). Female sexuality has begun to be considered as an important aspect of women's health with the World Health Organisation (WHO, 2014) declaring this as a basic human right. Exploring sexuality and sexual wellbeing with women is part of the holistic nature of care and therefore the complexities of sexual identity and sexual dysfunction relating to living with diabetes need recognition within practice (Phillips & Khan, 2010).

2. Female sexual dysfunction

FSD has several causes including interpersonal, contextual (social), psychological and biological (Berman, 2005). Consequently, every factor contributing to normal sexual functioning can be a potential cause of dysfunction. The first phase of female sexual response is governed by a combination of neuromuscular and vasocongestive events including increased clitoral size (diameter and length), vaginal lubrication and wall engorgement (Otunctemur et al., 2014). Orgasm is the culmination of sexual arousal, although Lloyd (2005) reported that approximately 90% of women report orgasm from some form of sexual stimulation, most women do not and some never experience orgasm solely from sexual intercourse, whereas 100% of men routinely experience orgasm solely from sexual intercourse.

Maiorino et al. (2014) reported that normal sexual response requires the integrity of the sensory and automatic nervous systems responding to erotic stimuli. The smooth muscle relaxation of the female genital erectile tissue and increase in blood supply are dependent on the healthy action of non-adrenergic/non-cholinergic neurotransmitters. The regulation of blood supply and clitoral erectile function is governed by the same vasoactive intestinal polypeptides such as Nitric Oxide and cGMP that govern erectile functioning in males. Bargiota et al. (2011) also reported that normal levels of various hormones are required for physiologic sexual activity. Diabetes can potentially disrupt all of these integrated systems triggering females to experience sexual dysfunction. The systems involved include hyperglycaemia, vascular and neuropathic damage, infections and hormonal disorders.

In males, orgasms are under 'strong selective pressure' as orgasms are coupled with ejaculation thus contributing to reproductive success

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(Wallen & Lloyd, 2011). By contrast, female orgasms in intercourse are under little selective pressure as they do not constitute a reproductive necessity. Normal sexual function in females occurs by an interaction between emotional and physical wellbeing; this complex interaction maybe modified by disease, anatomic, physiological and/or emotional causes (Vaccaro et al., 2014).

Sexual difficulties in females appear currently more readily recognised in society (Maiorino et al., 2014) with large epidemiological US studies reporting the prevalence of FSD to be 40%–60% (Dennerstein et al., 2002; Lindau, 2007; Shirfren et al., 2008) with highest values reported in postmenopausal females.

3. Diabetes

Diabetes is one of the most common long term diseases in nearly all countries and is increasing to epidemic proportions; the International Diabetes Federation (IDF, 2015) reported a world prevalence of 387 million people diagnosed and living with diabetes which is 8.3% of the world population. Also predicted is 46.3% of the world population being undiagnosed currently. The prevalence of diabetes is anticipated to reach 592 million by 2025 (IDF, 2015). A higher prevalence of FSD has been associated with diabetes (Maiorino et al., 2014).

Research into the arterial blood supply supplying the female pelvic anatomy relating to the presence of atherosclerosis of the arterial bed can lead to decreased vaginal engorgement and clitoral insufficiency syndrome resulting in vasculogenic FSD (Doumas et al., 2006; Gragasin et al., 2004). Additionally the prevalence of Metabolic Syndrome increases during the fifth and sixth decades of women's lives and also coincides with the onset of the menopause hence associated with the lower oestrogenic milieu which enhances risk factors for metabolic syndrome such as increased insulin resistance, obesity and hyperglycaemia (Otunctemur et al., 2014). Hyperglycaemia is the main determinant of preventable vascular and neuropathic complications of diabetes and control of risk factors in a person centred partnership is the focus of effective diabetes care (Phillips, 2012).

FSD is associated with both type 1 insulin dependent diabetes (Enzlin et al., 2009) and type 2 diabetes (Giugliano et al., 2010). A meta-analysis by Pontiroli et al. (2013) which included 26 studies and 3168 women with diabetes compared to 2832 controls reported that the risk for sexual dysfunction was 2.27 (95% confidence interval (CI) with 2.49 (CI 1.55–3.99) in type 1 and type 2 diabetes respectively. Interestingly, Pontiroli et al. (2013) reported increased risk of FSD in premenopausal rather than postmenopausal females.

The presence of prolonged hyperglycaemia reduces the hydration of the vaginal mucus membranes, producing reduced lubrication and females experiencing dyspareunia (Erten et al., 2013; Ismail et al., 2014). Hyperglycaemia also increases the risk and incidence of genitourinary and fungal infections which can cause vaginal discomfort and dyspareunia (Phillips, 2012). Vascular and neuropathic complications of diabetes can cause decreased nerve stimulation and blood flow, which inhibit sexual response to stimuli, thereby impairing reaction of the vaginal tissue to reduced nerve stimulation (Maiorino et al., 2014). Vascular abnormalities including atherosclerotic damage and diabetes-induced endothelial dysfunction are postulated to also interfere with clitoral engorgement and vaginal lubrication which lead to decreased arousal and dyspareunia during intercourse. Additionally the presence of neuropathy can further participate by altering the normal transduction of sexual stimuli and triggered sexual response (Duby et al., 2004).

Several endocrine pathways are associated with diabetes; Bhasin (2007) and Feldhaus-Dahir (2009) undertook epidemiological studies which indicated that the alterations of androgens and oestrogens implicated in disorders such as polycystic ovarian syndrome which is associated with obesity, insulin resistance, lipid disorders and ovulatory infertility also affect FSD (Eftehar et al., 2014). Hormonal imbalances accompanying diabetes such as thyroid and/or hypothalamic–pituitary disorders can further contribute (Bhasin, 2007).

4. Psychological considerations

FSD is generally a self-reported condition and thereby continues to be unrecognised and under reported (Thakar, 2009). FSD has an important impact on females' quality of life. Filocamo et al. (2013) reported from their cross-sectional multi-centre study in gynaecological and urological clinics across Italy that under-reporting of FSD reflected practitioners' reluctance to ask females about their sexual life during consultations. Their study used the Female Sexual Function Index (FSFI) which is recognised as the gold standard for screening for FSD.

Vafaeimanesh et al. (2014) in their descriptive analytical study recognised a strong association of women experiencing FSD with psychological health issues such as anxiety, depression, low self-esteem, body image perception disorders, sexual performance anxiety, fear of rejection, past traumatic sexual experience and history of abuse (Bancroft et al., 2005; Cryanowski et al., 2004). Furthermore, Ismail et al. (2014) recognised that being diagnosed with diabetes or during a period of ill health might cause females to experience a loss of libido. Furthermore, obesity and being overweight are associated (independently of age) with FSD (Costa & Brody, 2014).

Several factors have been associated with reduced or absent subjective sexual arousal and research has substantiated the association between sexual and mental health of women such as diminished desire and arousal (Kalmbach et al., 2014). Depression is twice as likely to be experienced by people living with diabetes and one in three people with diabetes experiences a significant loss in their quality of life due to depression, with the risk for females being higher than for males (Phillips, 2012). Several research studies have reported increased incidence of depression with lower educational levels (Kucuk et al., 2013; Lloyd et al., 2012; Sivrikaya et al., 2014; Stankunas et al., 2006; Yang et al., 2009). Practitioners also need to acknowledge the effects on sexual dysfunction of anti-depressant treatments.

Associated to this, acknowledgement of the practical difficulties of living with diabetes can cause anxiety and distress which can further inhibit or trigger FSD. Distress related to body image perception from worrying about the seemingly unsightly appearance of induced lipohypertrophy at injection sites can be inhibiting when engaged in sexual activity with new partners (Phillips & Khan, 2010). Additionally, for women who use insulin, fear of an unexpected hypoglycaemic episode during or after sex, or not recognising if a hypo is occurring can cause anxiety.

Enzlin et al. (2009) as part of the EDIC Study Group reported that females with diabetes had a more negative appraisal of their condition and more problems with their emotional adjustment to the disease. They also reported less satisfaction with their diabetes treatment. Enzlin et al. (2009) also studied females who experienced diabetes related complications compared to those who were complication free at the time of their study. The difference between the two groups was significant as the females who were living with diabetes related complications including FSD blamed this 'as another complication of the disease'. Sarkadi and Rosenqvist (2003) identified in their cohort study of females with diabetes, the expression of guilt and embarrassment related to their diabetes, and Phillips (2014) identified diabetes related grief and distress as having a significant influence on women's appraisal and perception of their diabetes.

Additionally, problems relating to FSD are multi-factorial as recognised by Berman (2005). These can be connected to emotional and social difficulties in the woman's life including work related, family or relationship distress. The quality of the relationship is recognised as a major factor, from research into women's experiences of sexual dysfunction (Sivrikaya et al., 2014).

5. What practitioners need to ask?

Sexual health is very personal and women can feel embarrassed when asked about it. They might feel it more appropriate to see a female