

Sexuality and sexual dysfunctions in older people: a forgotten problem

ARTICLE

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SUMMARY

This article considers sexuality in older adults and the associated stereotypes and stigmas that lead to this area being underappreciated. Normal physiological changes in ageing are discussed and how they can cause sexual dysfunction. The elderly population has a higher burden of comorbid physical illness and this review considers evidence on the interplay between physical health and sexual health. Mental illness is also strongly linked with sexual functioning and is discussed, as is the evidence on psychotropics and sexual side-effects. Attitudes on sexuality in long-term care settings are highlighted and approaches to managing sexual disinhibition are included.

LEARNING OBJECTIVES

After reading this article you will be able to:

- appreciate the impact of ageing on sexuality and understand normal changes in sexual functioning with age
- demonstrate knowledge of the interplay between physical health and sexual function and consider how mental illness can affect on sexuality
- understand sexual disinhibition in dementia and approaches to managing this.

DECLARATION OF INTEREST

None.

KEYWORDS

Sexuality; sexual dysfunction; older people.

has been estimated that, by 2030, 4% of the elderly population of the USA (3 million people) will identify as LGBTQ (Omole 2014), and this is a growing population worldwide that is often ignored in the literature.

Taking a sexual history can be a difficult topic to approach in medical settings: in one study of health-care professionals in a general medical setting 92% admitted that they never initiated this discussion with their patients (Ho 2006). The strongest predictor of whether a physician will address sexual health issues has been suggested to be previous communication skills training (Tsimsiou 2006). There are, of course, many reasons why discussing sex and sexuality is a neglected area in the psychiatric consultation. It has been suggested that some mental health professionals feel uncomfortable discussing sex with patients of the opposite gender owing to concerns over professional boundaries being crossed (Quinn 2011). In some cases, professionals are reluctant to discuss the topic because they perceive that it is not their role to talk about sex or they do not feel comfortable dealing with issues that might be raised (Tsai 2004). Patients may also be uncomfortable about such discussions and they often avoid raising sexual problems with their clinician owing to reasons such as embarrassment, fear that they will be viewed as abnormal or deviant and not wanting to waste time and money (Taylor 2011).

When thinking of older adults there are many pre-conceptions and stereotypes that persist. There is still often a stated belief that older adults do not enjoy or want sexual activity. Studies in this area have suggested otherwise. For example one study showed that 62% of men and 30% of women between 80 and 102 years of age were sexually active (Omole 2014). These proportions are also potentially increasing over time. A large study of trends in sexual activity in Swedish 70-year-olds between 1971 and 2001 showed an increase in sexual intercourse in all groups studied: from 52 to 68% in married men, 38 to 56% in married women, 30 to 54% in unmarried men and 0.8 to 12% in unmarried women (Beckman 2008). This study also showed a trend of increased sexual satisfaction, less sexual dysfunction and more positive

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Sexuality in old age encompasses more than sexual activity. The World Health Organization has attempted to define sexuality as involving 'sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction' (World Health Organization 2006). Discussing sexuality in older adults is often thought of as a taboo subject. This has led to a stigma attached to this topic, which in turn can be internalised by older adults (Levy 1994). Sexuality is even more difficult to study in older adults who identify as lesbian, gay, bisexual, transgender or queer/questioning (LGBTQ), as the available studies often have a bias towards heteronormative sexual behaviour. It

attitudes to sexuality in later birth cohorts in comparison with earlier birth cohorts (Beckman 2008).

As previously alluded to, most studies of older adults have focused on quite similar groups – mostly married couples of higher socioeconomic status (SES). In a study of mostly single older adults of lower SES, a majority reported sexual activities (holding hands, hugging, kissing) on at least a monthly basis (Ginsberg 2005). Although most of these adults (82%) did not report sexual intercourse there was still a desire for sexual activity, with the main limiting factor being the availability of a partner (Ginsberg 2005).

There is a lack of evidence of experiences of sexuality in the older LGBTQ population. A survey of 265 adults (aged 60–75) in same-sex relationships reported high levels of satisfaction with their relationship that were directly correlated with increased sexual satisfaction (Fleishman 2019). It is also important to acknowledge that not all older people feel comfortable disclosing their sexual orientation. An American study of gay, lesbian or bisexual older adults found that 73% of participants were ‘out’ and comfortable with their self-identified label (Orel 2014).

Sexual function and age

There is much known about the physiological changes in male and female sexual function as the body ages, and sometimes these changes can contribute to sexual dysfunction.

Women

In women after the menopause it is known that vaginal lubrication reduces and the vaginal epithelium thins, which can lead to pain during intercourse (dyspareunia) (Dhingra 2016). These changes appear to be related to reduced levels of oestrogen, leading to vulvovaginal atrophy (Thomas 2018). Owing to the chronic and progressive nature of vulvovaginal atrophy it is recommended that early recognition and treatment provide the best symptomatic relief and reduction in dyspareunia and sexual dysfunction (Nappi 2019). First-line treatment is usually with local oestrogen therapy and sometimes systemic hormone therapy; other options include vaginal lubricants and pelvic floor training (Nappi 2019). Pelvic organ prolapse can occur in older women and adversely affect sexual function. Successful pelvic organ prolapse surgery can lead to significant improvements in sexual satisfaction and function (Geynisman-Tan 2018).

Men

The two main changes in sexual function with age in men are erectile dysfunction and ejaculatory

dysfunction. It has been suggested that erectile dysfunction occurs in around 50% of men over the age of 70 and is mediated by psychological and physiological factors; the most important risk factors include age, obesity, smoking, coronary artery disease and depression (Krzastek 2019). The most common treatments for this disorder are lifestyle changes to reduce vascular risk factors (e.g. stopping smoking, losing weight) and oral vasodilating phosphodiesterase type-5 inhibitors, which act to increase blood flow to the penis (Krzastek 2019). Newer techniques include intracavernous injections of prostaglandin E1 and penile implant surgery (Rajpurkar 2003). An even more novel treatment being explored is low-intensity extracorporeal shockwave therapy, which acts by promoting neo-vascularisation (Vardi 2010). A study looking into potential age bias in men presenting to their doctor with erectile dysfunction found that, even when they presented with a clear psychosocial indication for the problem, doctors were still more likely to prescribe medication to older patients and to consider psychological treatment for younger patients (Gewirtz-Meydan 2017).

As erectile dysfunction has reduced in recent years, thanks to the development of effective treatments, and clinicians are seeing an increase in ejaculatory dysfunction it has been suggested that an improved ability to achieve an erection does not necessarily translate into the ability to enjoy sex and achieve orgasm (Kleinplatz 2008).

Sexual dysfunction and medical comorbidity

Medical comorbidity and chronic illnesses are important contributors to sexual dysfunction. The older population has a higher burden of comorbidity and it is therefore important to consider how some of these illnesses can affect a person’s sexuality. Significant risk factors for sexual dysfunction in men and women include chronic illness, diabetes and heart disease (McCabe 2016).

Parkinson’s disease

Sexual dysfunction and Parkinson’s disease are closely linked. The motor and non-motor symptoms of the disease both contribute to sexual dysfunction and reduced pleasure (Bronner 2017). The high burden of depression and anxiety in Parkinson’s disease is included in this formulation. Sexual behaviours noted in some people with Parkinson’s include increased preoccupation with sex and even hypersexuality, which are thought of as part of the non-motor syndrome of the disease (Bronner 2017).

It is important to keep in mind the link between dopaminergic medication and impulse control disorders, which can include impulsive sexual

behaviours. The interference of motor symptoms with sex can be managed with the introduction of dopaminergic drugs, with adjustments made to the timing of the doses; similarly, adjustment of dopaminergic drug doses is the recommended initial approach to hypersexuality (Bronner 2011).

Sildenafil has been found to be effective for erectile dysfunction in men with Parkinson's disease and depression: improved erections were reported by 84.8% of participants in one study (Raffaele 2002). Counselling and teaching specific techniques can help with delayed ejaculation and premature ejaculation, and antidepressants have been used for premature ejaculation (Bronner 2011).

Women can present with urge incontinence during intercourse, which can be addressed by emptying the bladder before sex and treatment of the overactive bladder (Bronner 2011).

Diabetes

Diabetes is commonly seen to affect sexuality. Ageing and long duration of diabetes are reported to reduce sexual functioning (in men more than women) and reduce the sexual quality of life of partners (Owiredu 2017). In a survey of women with type 2 diabetes mellitus, up to 88% reported sexual dysfunction, including loss of interest, enjoyment or ability to participate in sex (Rahmanian 2019). Sexual dysfunction is also widely seen in men with diabetes and can present in similar ways, with the addition of erectile and ejaculatory dysfunction (Owiredu 2011). Mechanisms for sexual dysfunction in diabetes are multifactorial but include psychological, neurological, circulatory and iatrogenic causes (Rahmanian 2019).

Chronic kidney disease

Chronic kidney disease is a common comorbidity in the older population and is also linked with sexual dysfunction. One study found that 70% of participants with end-stage renal disease receiving dialysis reported sexual dysfunction (van Ek 2018). Pre-dialysis patients also frequently report sexual dysfunction (reduced frequency, anorgasmia, impotence, avoidance), with the most important factors being older age, hypertension, anxiety and depression (Güven 2018).

Cancer

As cancer treatment improves there is an ever-growing population of long-term cancer survivors. Sexual dysfunction is a common problem following cancer treatment – prevalence estimates range from 40 to 100% – and encompasses a variety of problems, such as loss of motivation, poor body image and self-esteem, chronic dyspareunia and

anorgasmia (Zhou 2015). Specific questionnaires exist to aid assessment of sexual function in cancer survivors and they emphasise the importance of normalisation of these problems (Bober 2012). Treatment options will vary depending on the specific dysfunction and, often, the type of cancer. Options include review by urologists, endocrinologists, clinical psychologists, liaison psychiatrists, sexual health counsellors and pelvic floor physical therapists (Zhou 2015).

Cardiovascular disease

There is a strong link between cardiovascular disease and both erectile dysfunction and female sexual dysfunction. As the person ages we see a higher burden of cardiac disease and reduced cardiac function. Sexual activity (ranging from foreplay to intercourse) places strain on the cardiovascular system, increasing blood pressure and heart rate, often described as the equivalent of climbing two flights of stairs (Mornar Jelavić 2018). Lifestyle changes and medical treatment of cardiac disease can improve erectile dysfunction and quality of life although, conversely, cardiovascular medications can exacerbate erectile dysfunction (Roushian 2019).

Psychotropics and their impact on sexual function

It is, of course, well established that not only are depression and anxiety important risk factors for sexual dysfunction but so are many of the psychotropics prescribed to treat them (McCabe 2016). For example, a common difficulty for the clinician is unpicking reduced sexual drive due to ongoing depressive illness from treatment-emergent sexual side-effects that are unfortunately common to many of the antidepressants that are used.

Antidepressants

The first-line treatment for depression is usually a selective serotonin reuptake inhibitor (SSRI). Sexual dysfunction is known to be associated with SSRI treatment: there is reported to be a twofold risk of hypoactive sexual desire and higher levels of erectile dysfunction and delayed ejaculation (Corona 2009). It is suggested that the frequency of sexual dysfunction due to SSRIs is higher in men, whereas the intensity of the dysfunction appears to be higher in women (Montejo-González 1997).

The incidence of sexual dysfunction seen with venlafaxine (58–73%) is similar to that with the SSRIs, with lower incidence rates reported with mirtazapine (24.4%), nefazodone (8%) and moclobemide (3.9%) (Montejo 2001). It is suggested that

serotonin reduces sexual drive and therefore the more strongly serotonergic medications appear to confer higher rates of sexual dysfunction (Gitlin 1994). Mirtazapine, which is less purely serotonergic than the SSRIs, is therefore often the antidepressant of choice for people who experience sexual side-effects on SSRIs. A similar rationale is also used to support the lower incidence of sexual dysfunction with the tricyclic antidepressants (Gitlin 1994). However, vortioxetine, a newer agent used for treatment-resistant depression that is thought to work via multimodal serotonergic action, has a low incidence of sexual dysfunction (Salagre 2018). In a randomised controlled trial vortioxetine did not show significantly different effects on sexual functioning in comparison with placebo (Jacobsen 2019). Generally, the sexual side-effects of antidepressants are dose-dependent and reversible on switching medication, although there are rare reports that sexual side-effects persist even after discontinuation (Waldinger 2015).

Antipsychotics

Sexual dysfunction is a side-effect also seen with many antipsychotics. The mechanism originally proposed involves dopamine blockade releasing the anterior pituitary gland from the effects of prolactin-inhibiting hormone (dopamine), resulting in increased production of prolactin, which can cause symptoms such as erectile dysfunction, amenorrhoea and reduced sex drive. Prolactin levels alone do not predict sexual dysfunction and the main pathway suggested is via antagonism of D₂ dopamine receptors in the mesolimbic pathway, leading to reduced libido (Downing 2019). As a result, reduced libido is seen in the majority (in one large study, 54.2%) of patients on an antipsychotic (Downing 2019). A summary of antipsychotics' impact on sexual dysfunction suggested that risperidone caused the most problems, followed by first-generation antipsychotics (particularly haloperidol), then olanzapine, then quetiapine, with aripiprazole causing the fewest problems (Baggaley 2008). Broadly speaking, 'prolactin-inducing' antipsychotics (first-generation agents, and the second-generation drugs risperidone, paliperidone and amisulpride) appear responsible for more sexual dysfunction than the 'prolactin-sparing' agents, although sexual side-effects are still commonly reported with some of these medications, for example clozapine and olanzapine (Stroup 2018).

As with antidepressants, the common approach to managing sexual dysfunction with antipsychotics would be first to reduce or switch the agent if this is possible. Aripiprazole acts as a partial agonist of dopamine receptors and appears to have a neutral

effect, or indeed a reductive effect, on prolactin levels, resulting in avoidance of sexual dysfunction (Shah 2013). It is therefore often the antipsychotic of choice to switch to if a person is experiencing sexual dysfunction on antipsychotic treatment and it is also used in some situations as an adjunct treatment where hyperprolactinaemia results from antipsychotic treatment. A recent systematic review was unable to make specific clinical recommendations owing to a lack of suitable studies but did identify small studies suggesting benefit of adjunct sildenafil or adjunct aripiprazole in reducing antipsychotic-induced sexual dysfunction (Allen 2019).

Mental illness and sexual dysfunction

There is little in the literature specifically on older people's mental illness and sexuality; however, the impact of mental illness on sexuality and sexual functioning is wide and well-studied. It has been estimated that only 44.9% of individuals with a severe mental illness were sexually active in the past 3 months, and perceptions of stigma and poor self-esteem are important mediators in the reduction of sexual activity (Bonfils 2015).

Depression and anxiety

Sexual dysfunction is strongly associated with depression and is related to several depressive symptoms, such as low energy, low motivation, poor self-esteem, anhedonia and reduced libido. As already discussed, this is compounded by many antidepressants conferring a risk of sexual side-effects. It has been suggested that the prevalence of sexual dysfunction in people with depression is twice that in healthy controls and that recurrent depression may be more associated with sexual dysfunction than single episodes of depression (Montejo 2018). A study that attempted to identify the baseline of sexual dysfunction in depressed individuals before treatment found that around one-third reported reduced interest in sex, with the most common dysfunction being reduced levels of arousal, followed by problems achieving orgasm or ejaculation (Thakurta 2012).

The burden of sexual dysfunction appears to be higher in major depressive illness (76%) than in the common anxiety disorders, although there are still significant rates of sexual dysfunction reported in conditions such as obsessive-compulsive disorder (OCD) (50%) and generalised anxiety disorder (64%), with low desire being the most common dysfunction (Kendurkar 2008). Fear of contamination during sexual activity is thought to be an important aspect of sexual dysfunction in OCD (Sabetnejad 2016). Reduced sexual functioning, however, can still be found in people with OCD irrespective of

fears of contamination or medication use (Vulink 2006).

A randomised controlled trial looked at response of sexual dysfunction in women with OCD to treatment with fluoxetine or cognitive-behavioural therapy (CBT) and found that those who received CBT showed significant improvement in areas of desire, arousal and orgasm though not in problems of reduced lubrication and dyspareunia (Sabetnejad 2016). There was a reported reduction in satisfaction and sexual function in the group treated with fluoxetine, possibly related to sexual side-effects (Sabetnejad 2016). The use of CBT more generally to target sexual dysfunction is an area where there is currently a lack of strong evidence to support formulation of guidelines (ter Kuile 2010). Both OCD and panic disorders are seen to be related to sexual dysfunction independent of medication use; therefore assessment of sexual functioning before psychotropic initiation could be an important aspect of treatment and prevention of further difficulties (Aksoy 2012).

Eating disorders

Sexual dysfunctions are commonly seen in eating disorders and the psychopathology of these disorders is thought to be an important factor in perpetuating these problems (Castellini 2013). The dysfunctions are likely to be multifactorial, including contribution from physiological changes related to low body weight and starvation (e.g. lethargy, amenorrhoea), comorbid depressive symptoms, problems with self-esteem and perceived body image (Castellini 2012). There is suggestion that the mechanisms of sexual dysfunction may vary between anorexia nervosa and bulimia nervosa: in one study, dysfunction was found to correlate with body mass index in anorexia, whereas the correlation found in bulimia was with depressive symptoms measured by the Beck Depression Inventory (Gonidakis 2015).

Although treatment of sexual dysfunction in the eating disorder population has not been studied in detail it is thought that treatment focusing on body image, binge eating and emotional eating could improve sexual function (Castellini 2012). Psychotropic treatment of the eating disorder and any comorbid depressive illness would also appear to be a sensible approach to improving underlying dysfunctions, keeping in mind the difficulty with sexual side-effects.

Schizophrenia

Sexual dysfunction in schizophrenia is complex (Box 1): it can be related to symptoms of the condition (particularly negative symptoms), antipsychotic medication, comorbid physical health conditions,

BOX 1 Case vignette 1: antipsychotic treatment for sexualised behaviour in paranoid schizophrenia

A 78-year-old man with paranoid schizophrenia was admitted to hospital showing signs of mental disorder, including hallucinations, religious delusions, delusions of influence and paranoid delusions. He was displaying suspicious, hostile, aggressive and sexualised behaviour. He had falsely accused his daughter of incest, saying that she wanted to marry him. On the ward, he follows a female in-patient, wanting to tell her that he 'does not have sperm anymore and wouldn't have children'. He tells doctors that he is concerned that he is not having erections, is

sexually inactive and would like to be back to normal again. He has been masturbating every night but could not get any result.

A computed tomography (CT) head scan shows mild ischaemia and mild cerebral volume loss without lobar predominance. He scores 69/100 on the Addenbrooke's Cognitive Examination-III (ACE-III). There is no evidence of frontotemporal dementia.

With proper antipsychotic treatment his symptoms subsided and he was discharged from hospital back into the community.

stigma and other psychosocial factors (de Boer 2015). A study of drug-free men with psychosis in India showed a prevalence of 25% for sexual dysfunction in those engaged in sexual activity; dysfunction was related to both older age and later age at illness onset (Ravichandran 2019). Other studies have suggested prevalence of dysfunction between 30 and 60% in drug-free patients with psychosis and prevalence as high as 80% in a more general population of men with schizophrenia (Ravichandran 2019). In a rural Chinese population with schizophrenia 71.3% reported sexual dysfunction and this was associated again with old age and with burden of negative symptoms (Huang 2019). Although there is a paucity of research into this area it has also been suggested that loss of interest in sex in people with schizophrenia is associated with advancing age, female gender, cardiovascular medication, negative symptoms and lower sexual self-efficacy (self-confidence and self-control in sexual experiences) (Bianco 2019). It is not clear whether treatment of the psychotic disorder confers an improvement in dysfunctions: a study of men with schizophrenia in remission still showed high levels of dysfunction (between 78.4 and 97.1%) across five domains of sexual functioning (Kheng Yee 2014). Another aspect of sexuality studied in schizophrenia is risky sexual behaviour, which refers to unprotected sex with risk of unwanted/unintended pregnancy and transmission of sexual diseases. A prevalence of 39.4% was reported in a study of 429 people with schizophrenia in Ethiopia, with associated factors including male gender, younger age, positive symptoms and substance misuse (Negash 2019).

Bipolar affective disorder

Bipolar affective disorder can be associated with both hyposexual disorders and hypersexuality,

often related to the polarity of the current episode of the illness. Sexual dysfunction during bipolar depression can be thought of as similar to the dysfunction seen in a unipolar depressive illness, and as in that illness there are also reports of residual sexual dysfunction in euthymic patients (Montejo 2018). Residual sexual dysfunction has been shown to affect medication adherence in clinically stable individuals with bipolar disorder so is important to keep in mind when assessing the patient (Grover 2014). Sexual distress and dissatisfaction have been found to be higher in people with bipolar disorder than in the general population and higher rates of sexual desire are seen in these patients in comparison with those with unipolar depression (Sørensen 2017). Stigma again appears to play an important role in bipolar disorder: a US study found that rates of marriage were lower in adults with bipolar disorder (32.8%) than in the general population (55.7%), and 52.9% of patients felt that stigma affected their relationship success (Jackson 2018). Mania-induced hypersexuality and risky sexual behaviour is well-known but understudied in this population, as are lower intensity increases in sexual behaviour and the impact of cycling mood on relationships (Kopeykina 2016). Guidelines for treating acute manic episodes are well established but again there is little specific guidance on hypersexuality and the recurring problems of sexual side-effects of medication.

Sexuality and long-term care settings

This is a vast topic that may require a further review on its own merits. Encompassing people with cognitive impairment or dementia and the wider population of older adults, sexuality in care homes and nursing homes is a topic that causes some discomfort in relatives, staff and healthcare professionals. Sexuality does not stop being an important aspect of a person's life just because they move into a care setting, but studies of staff perceptions show variation from acceptance of 'loving behaviours' such as holding hands to outright rejection of more 'erotic behaviours' (Ehrenfeld 1999). It has been suggested that the binary approach of labelling sexual behaviour as either 'appropriate' or 'inappropriate' by care staff fails to consider the complexity of situations (Vandrevalla 2017) and perhaps this has led to a paternalistic attitude with the best intentions of safeguarding the individual from harm. In addition to attitudes of staff, another significant barrier to exploring sexuality in care homes is the lack of privacy afforded to residents (Parker 2007). This is compounded by the practice in some long-term care facilities of separating existing couples on entry to the care home (Elias 2011).

Discrimination against LGBT residents

Residents themselves have often reported positive attitudes towards sexuality in old age but when it comes to sexual activity, attitudes tend to be more negative, in part due to beliefs about perceived 'appropriateness' (Mahieu 2015). Among LGBT older adults, a study of perceptions of discrimination in retirement care facilities showed that 73% believed that discrimination existed and the sources of perceived discrimination included administration, care staff and other residents (Johnson 2005). There has been a presumption of heterosexuality in older adults and this is suggested to be linked to discrimination sometimes experienced by LGBT residents and the conflict that signs of affection between LGBT residents can cause in long-term care settings (Addis 2009). One study found that lesbian and gay older men delayed entry into long-term care, possibly because of these perceptions but also because they saw long-term care as a real threat to their independence (Claes 2000).

Cognitive impairment and dementia

Cognitive impairment and dementia in long-term care give rise to ethical issues regarding consent and capacity. Sexual expression, both verbal and physical, varies greatly in dementia and too often is only thought of as a subset of agitated or inappropriate behaviours (Makimoto 2015). This perception also influences the limited research on sexuality in residents with dementia in care homes, and there is a focus on problems faced by staff rather than a more holistic approach (Elias 2011). Achieving a balance between a person with dementia's desire for sexuality and the staff's role to protect can often cause conflict and challenging behaviour (Ehrenfeld 1997). The lack of national guidelines and policies can lead to inconsistent approaches and local variation (Makimoto 2015). A common theme in long-term care settings is a lack of staff education on issues such as sexuality, risk assessment and assessment of capacity to consent to a sexual relationship (Elias 2011). Therefore, in the environment of the care home it can be difficult to separate a cognitively impaired resident's attempts to fulfil their sexual needs from illness-related sexual disinhibition (Box 2).

Sexual disinhibition in dementia

Sexual disinhibition is often a complex and emotionally charged presentation in a person with dementia. It is an area which is under-researched in the literature, resulting in a lack of guidelines, and pharmacological treatment is usually 'off licence'. Sexual disinhibition is more commonly seen in moderate to severe dementias but can present earlier in people

BOX 2 Case vignette 2: treatment of acute confusional state (delirium)

A 70-year-old woman was admitted to hospital with acute confusional state. Before admission she was functioning very well in the community. She had visual hallucinations of aliens and believed that her deceased husband was alive and wanted to make love to her. She was observed to be naked or underdressed, waiting for her husband to come.

She did not respond to psychotropic medications. Following inpatient investigations we discovered a urinary tract infection and with proper treatment with antibiotics her confusion symptoms subsided. She was discharged back home with follow-up by the Community Mental Health Team.

with frontotemporal dementia (Cipriani 2016). Common approaches to assessment include behaviour charts (Antecedent–Behaviour–Consequence charts, Red–Amber–Green charts) and a biopsychosocial formulation of the presentation, as with assessment of challenging behaviour more generally in dementia.

Non-pharmacological management is the first-line treatment, in part because of the lack of strong evidence to support use of psychotropics, which will carry their own risks. Behavioural management plans can be developed, considering possible environmental cues for the behaviour. Common approaches can include distraction techniques or redirection to a private area of the home. Specialist clothing that opens at the back to prevent undressing is sometimes used (Cipriani 2016). This does raise ethical issues concerning restraint and capacity and necessitates discussions about the person's best interests to identify whether this is the least restrictive option.

Antidepressants

Antidepressants are commonly used to treat sexual disinhibition, often in part because of their better safety profile than options such as antipsychotics. There exist case studies to support the use of a variety of antidepressants, including SSRIs, trazodone, mirtazapine and even the tricyclic antidepressant clomipramine despite its potential to increase confusion in people with dementia (De Giorgi 2016).

Cholinesterase inhibitors and beta-blockers

Cholinesterase inhibitors are often used to treat behavioural and psychological symptoms in dementia but the evidence to support their efficacy in sexual disinhibition is more conflicted (Joller 2013).

The beta-blocker propranolol has been used because of its side-effects of reduced sexual drive

and sexual dysfunction, which are hypothesised to be due to its reduction of adrenergic drive (De Giorgi 2016).

Antipsychotics

In the UK, the antipsychotics risperidone and haloperidol are licenced for the short-term treatment of aggression in Alzheimer's disease but their use must be balanced against the known increased risk of strokes and cardiovascular events in this population. Although most of the literature on antipsychotics in dementia focuses more broadly on challenging behaviour there are case studies showing successful use in sexual disinhibition, for example quetiapine (Prakash 2009), aripiprazole (Nomoto 2017) and haloperidol (Kobayashi 2004). The first-generation antipsychotic benperidol is no longer used in clinical practice to treat psychotic illnesses but does still see some use owing to its licence for treating 'deviant antisocial sexual behaviour' (Joint Formulary Committee 2019). Use of this drug in people with dementia appears more based on anecdotal experience, with no recent trials supporting its use. The evidence for use of benperidol originates from studies in the 1970s of sexual deviancy in prisoners (Field 1973).

Anticonvulsants

There is often an overlap between medications used to treat severe agitation in dementia and those trialled in sexual disinhibition, possibly reflecting the lack of strong evidence in treating both. Anticonvulsants have been historically used to treat challenging behaviour and some studies have looked at their use in sexual disinhibition. Carbamazepine has been used to treat severe agitation in dementia and there are case studies that show successful use of the anticonvulsant in treating sexual disinhibition (Freymann 2005; Poetter 2012).

Anti-androgens and progestins

Another long-standing option in the limited armoury for treating sexual disinhibition has been anti-androgens. The anti-androgen cyproterone acetate has been used in the forensic setting to treat offenders who have committed sexual offences, as it might reduce sexual desire, frequency and enjoyment (Lippi 2017). It is understandable that there can be some discomfort in using anti-androgens in people with dementia, particularly when much of the original evidence base comes from forensic settings, where it has been referred to by some as 'chemical castration'. There have, however, been case studies that show potential efficacy of these agents (Haussermann 2003). The progestin medroxyprogesterone has also been suggested to treat sexual disinhibition in

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dementia via a reduction in testosterone levels, and successful case studies exist for the intramuscular use of this medication (Light 2006).

'Chemical castration' and ethics

The term 'chemical castration' might be used more broadly to describe all of the psychotropics discussed in this section, not just the anti-androgens and progestins. There are ethical issues when prescribing medications for people with advanced dementia who lack capacity to consent to treatment. There should always be consideration of the person's best interests and the current level of risks. All the medications discussed have side-effects and risks to the person, particularly the anti-psychotics, which are known to increase the risk of stroke and mortality in people with dementia. This needs to be balanced with the potential risks to others from the sexually disinhibited behaviour and the risks to the person, who may well also be in a very vulnerable situation.

Conclusions

Sexuality is a central aspect of human experience and is protected under the right to a private life in Article 8 of the European Convention on Human Rights (European Court of Human Rights 2019). It is strongly linked with mental health and mental illness. Taking this into account only highlights the paucity of evidence in the literature on sexuality and mental health. This is even more the case when considering the older adult population. There is a need for further research in this area and more awareness and discussion of these issues, which might lead to a reduction in stigma over time. Stigma is a recurring theme in this topic and is often linked to both staff's discomfort discussing sexuality and the decreased likelihood that patients will initiate these discussions. It does seem that sexual dysfunction is multifactorial in the older population, with contributions from physiological changes, physical health comorbidities, medication side-effects, burden of mental illness and cognitive impairment. With more research it will be possible to start formulating treatment guidelines, which are certain to be focused on joined-up biopsychosocial approaches.

Authors' contributions

V.M.A. conceived the idea for this article and supplied the case examples. Both authors contributed to the literature search, wrote and reviewed the article.

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MCOs

Select the single best option for each question stem

1 Of the following antidepressants, the one with the lowest burden of sexual side-effects is thought to be:

- a duloxetine
- b lithium
- c sertraline
- d trazodone
- e vortioxetine.

2 Successful treatment of the underlying mental disorder does not usually result in resolution of sexual dysfunction in:

- a bipolar disorder
- b depression
- c schizophrenia
- d generalised anxiety disorder
- e obsessive-compulsive disorder.

3 Of the following non-motor symptoms that can affect sexuality in Parkinson's disease, the one that is most often iatrogenic is:

- a anxiety
- b impulse control disorders
- c hypersexuality
- d depression
- e preoccupation with sex.

4 Of the following antipsychotics, the lowest rate of sexual side-effects is seen with:

- a amisulpride
- b haloperidol
- c olanzapine
- d quetiapine
- e risperidone.

5 There is no evidence that sexual disinhibition in dementia can be successfully treated with:

- a sodium valproate
- b medroxyprogesterone
- c propranolol
- d quetiapine
- e carbamazepine.