Sexuality and Neurodegenerative Disease: An Unmet Challenge for Patients, Caregivers, and Treatment

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Keywords
Behavioral disturbances in dementia · Alzheimer’s disease · Neuropsychiatric symptoms of dementia · Hypersexuality · Inappropriate sexual behaviors

Abstract

Background: Many factors affect sexuality in the elderly such as dementia which is a common cause of inappropriate sexual behaviors. These behavioral disturbances are distressing, disruptive, and impair the care of the patient. Summary: The onset of dementia does not erase sexuality. Sexual expression can be an important aspect of well-being for older adults with dementia. This study gives a general overview about the relationship between sexuality and cognitive impairment. It starts with a general discussion of sexual aspects in the elderly. This is followed by research studies in this field including effects of dementia on sexual life, sexuality issues related to cognitive decline, inappropriate sexual behaviors in dementia patients, and sexuality in healthcare institutions. We discuss also ethical aspects in relation with sexuality and dementia. Finally, we show different approaches to treat inappropriate sexual behaviors. Key Messages: The discussion of sexuality in dementia raises many medical and ethical concerns. Inappropriate sexual behaviors are estimated to occur in about 7%–25% of demented patients. The question is how to address such a delicate subject and discuss it in an easy way without making the patient feel humiliated or mistreated. This narrative review reveals sexual problems and difficult questions encountered in daily practice with patients suffering from cognitive impairment.

Search Strategy

This study is based on a review of the literature. We searched the following major databases: PsycINFO, Embase, PubMed, Google Scholar, Web of Science, and AgeLine. Keyword search strategies designed to survey the literature included: behavioral disturbances in dementia; Alzheimer’s disease, neuropsychiatric symptoms of dementia, hypersexuality; inappropriate sexual behaviors. Additionally, reference lists of selected articles were reviewed to identify potentially relevant studies. We used the search terms in various groupings as keywords or medical subject headings when appropriate.
A systematic search of papers published between 1980 and 2021 was carried out. Articles from each database search were screened on the basis of titles, abstracts, and full text. Studies were included in the review if they met the following inclusion criteria: (a) qualitative, quantitative, and mixed methods studies; (b) concerned with sexuality; (c) concerned with individuals with dementia; (d) a primary focus on sexuality of patients suffering from neurodegenerative diseases; (e) studies focusing on attitudes of care staff and management of intimacy and sexuality in patients with dementia (f) studies were published in peer-reviewed journals. Studies were excluded if (a) not research-based or lacked relevance to the aims of the review; (b) the participant’s diagnosis of dementia was not explicitly stipulated in the publication; (c) articles covering normative sexual intimacy; (d) studies that focus on sexual disorders among noncognitively impaired populations; (e) studies focusing solely on legal, theoretical, and ethical aspects; and (f) research paper was not available in English or French.

The selection process is shown in Figure 1. A total of 601 articles were retrieved from the database searches from all 6 databases. The search resulted in 313 papers after the removal of duplicates. Titles and abstracts were screened and 101 nonrelevant articles were rejected. Of these, 149 articles were removed because they did not meet the inclusion/exclusion criteria. A total of 63 articles were subject to full text review.

Results

We found relatively few original studies that focus directly on sexuality in Alzheimer’s disease (AD) and other dementias (Table 1). In spite of the limited number of studies that directly address sexuality in dementia, the evidence sheds light on different interesting aspects of the sexual life in dementia patients and suggest directions for future research. Given the relatively small number of research and limited knowledge about the issue of sexuality in dementia, this preliminary literature also includes other relevant related literatures.

Sexuality in Elderly

In spite of the high prevalence of sexual problems with aging [1], sexual abstinence is not uncommon in the elderly. However, a high percentage of old persons remain sexually active [2–4]. Persson’s study of elderly adults living in Gothenburg, Sweden involved 266 women and 166 men of whom 16% and 46%, respectively, reported active sexual life. For men, current sexual activity is associated with better cognitive and mental health and better sleep. Quality of life and general satisfaction may be also affected by the decline in sexual activity with age [5].

Biological factors play an important role in sexual functioning. Cerebral aging, cognitive impairment, chronic diseases, multiple health problems, and physical decline account for decreased interest and desire in sexual relations in old age [6, 7]. Furthermore, changes in sex-
Table 1. Summary of main studies

| Study | Number of participants | Age | Sexuality issue | Method of sexuality investigation | Main findings |
|-------|------------------------|-----|----------------|-------------------------------|--------------|
| DeLamater et al. [6] | 1,384 | >45 years | Sexual desire in later life | Measures of a variety of biological, psychological, and social factors that potentially influence sexual functioning | Age, hormone levels, specific illnesses, and various medications negatively affect sexual functioning in older persons. Aging women and men with inadequate knowledge of sex and sexuality may be vulnerable to faulty expectations and concerns about performance. |
| Momtaz et al. [13] | 1,046 | 60 years and older | Effect of MCI on sexual activity | Data for the study were drawn from a national survey | MCI is significantly associated with decreased sexual activity in older adults. |
| Davies et al. [16] | 162 | Mean (SD) 76.8 (7.06) | Sexual behaviors of AD patients and their relationship to spousal caregiver well-being | The CEQ, A modified version of the ADDTC, CDBQ | Caregiver gender, satisfaction with intimacy, and caring for a patient with mild AD were significant predictors of caregiver depressive symptoms. The majority of couples dealing with AD reported engaging in intimacy. |
| Zeiss et al. [17] | 40 | 60–98 years | Sexual behavior in demented male patients | Behaviors were coded: appropriate, inappropriate, ambiguous | 18% of AD patients ever displayed a sexually inappropriate behavior, and these were usually brief and minor. Ambiguous behaviors, such as appearing in public incompletely dressed were more common. |
| Eloniemi-Sulkava et al. [18] | Spouse caregivers of 42 AD patients | – | Spouse caregivers’ perceptions of the influence of dementia on marriage | Semi-structured telephone interviews of spouse caregivers of demented patients | At 3 years from the onset of dementia, 19 couples (46%) continued to practice intercourse, at 5 years the number was 15 couples (41%), and at 7 years it had declined to 7 couples (28%). 60% of the caregivers reported that the demented patient had shown at least one negative sexual behavioral change during the course of dementia. |
| Ballard et al. [19] | Partners of 47 married patients with dementia | – | Sexual relationships in married dementia patients | Marital Intimacy Scale, Caregiver Stress Scale, Cornell Depression Scale, Burn’s depression Checklist | 22.5% of married dementia sufferers continued to have a sexual relationship, all of whom were satisfied with the situation. |
| Simonelli et al. [20] | 100 participants with AD partner | 55–58 years | Influence of caregiver burden on sexual intimacy in couples with an AD spouse | Semi-structured interview, Caregiver Burden Inventory Scale | Caregivers of partners who have been diagnosed a severe degree of AD report higher total burden scores. Caregivers with higher burden degree have less sexual intercourse. |
| Mendez et al. [28] | 47 patients with bvFTD and 58 with early-onset AD | bvFTD 60.4 (8.1) AD 57.7 (6.6) | Hypersexual behavior in FTD and early-onset AD | The bvFTD or AD patients were reviewed for the presence of hypersexual behavior | Hypersexual behavior occurred in 6 (13%) bvFTD patients compared to none of the AD patients. bvFTD is uniquely associated with hypersexuality, possibly from right anterior temporal-limbic involvement in this disease. |
| McAuliffe et al. [44] | 1,094 residents | – | Assessment of sexual needs in nursing homes | A survey is sent by post to the directors of nursing or nurse unit managers of all residential aged care services in Australia | Sexual health is not routinely assessed in residential aged care facilities. |
ual behavior may also be the result of medical treatments [8]. Moreover, the availability of a sexual partner in old age also influences the expression of sexual desires [2]. On the other hand, psychological and social aspects have a great influence on sexual functioning in old people and also on the attitude of the person to deal with sexual difficulties [6, 8, 9].

Cognitive Decline and Sexuality

The onset of dementia does not eliminate sexual life but rather changes the way in which love is given and received. The myth that patients with cognitive impairment are asexual is commonly used to discourage them from their sexual needs [10]. The gradual decrease of cognitive capacities in old age is one of the signs of the natural process of cerebral aging. Nevertheless, we observe in some cases that this process progresses considerably and it can involve problems with memory, language, thinking, and judgment that are greater than age-related cognitive decline. In this case, we can speak about mild cognitive impairment (MCI) which could be a transitional phase between the expected physiological cerebral aging and a more serious problem as dementia [3, 11, 12]. Generally these symptoms are not severe enough to interfere with daily life and usual activities including sexual functioning [3, 12]. Nevertheless, the findings from the study of Montaz et al. [13] show that one-third of the older adults with MCI have active sexual life compared to 62.3% of the healthy cognitive group, indicating that MCI negatively affects sexual activity in the elderly. Moreover, inappropriate sexual behavior has been reported in patients diagnosed with MCI [10].

AD is the most common type of dementia and represents 50%–70% of cases. It belongs to the group of diseases that cause neurodegenerative dementia. Its incidence in the Western developed world is 24 persons per million a year. It causes gradual decline of mental functions and leads also to a deterioration of physical conditions that results in a loss of autonomy, failure to perform daily activities, reduced coordination, and significant fatigue [3]. Neurological changes have multiple effects that may lead to mood and personality changes, lack of control of impulses, aggressiveness, and sexual behavior changes. Old adults who suffer from AD present these changes and try to hide them, especially in early stages by a variety of behavioral strategies [3, 14].

Sexual dysfunction is common among patients with AD and other dementias. Sexual functioning and well-
being of patients with dementia and their partners are affected by many factors as autonomic dysfunction, sleep disturbances, mood disorders, cognitive abnormalities, sensory disorders, medication effects, and relationship issues [10, 14, 15]. Alternations in patterns of sexual initiation and activity were reported in patients with AD, and frequently they were unable to stay focused on sexual acts due to becoming distracted or loosing arousal [16]. Zeiss et al. [17] reported that 50% of men with AD suffer from erectile dysfunction. Spouses of AD patients described decreased sexual satisfaction, which were significantly correlated with the severity of the disease. Decline in marital happiness was reported by spouse caregivers, and that was associated with decreased opportunities for physical intimacy. Spouses of both sexes express stress about the sexual relationship with their partners who no longer recognize them and were not capable of paying attention to their emotions [18]. While female partners of AD patients describe decreased sexual desire, male partners were more likely to be engaged in continuing sexual activities [10]. AD patients and their partners consider erectile dysfunction and lack of female desire as reasons for their sexual discontent. Thus, it is not surprising that patients with AD prefer non-intercourse sexual activities such as kissing, hugging, and cuddling. Male partners reported culpability and uneasiness when intercourse happened without the women’s understanding. While female partners of AD patients expressed worry about the loss of intimacy [10].

Ballard et al. [19] studied 40 couples affected by mild-to-moderate AD. They found that 22.5% continued to have sexual activities, and all were satisfied with the marital relation. Eloniemi-Sulkava et al. [18] found that 24% of the male AD partners were expressing frequently a sexual need, and in 33% expressions of tenderness increased. Interestingly, the authors reported that half of the couples continued to have regular sexual intercourse at 3 years from the onset of the cognitive impairment [18]. A recent study investigated affective and sexual dimensions in partners involved as caregivers of Alzheimer’s dementia subjects. Hundred AD partners aged between 55 and 85 years were recruited. The findings revealed a significant negative association between the burden of caregivers of AD patients and their satisfaction with both sexual and marital relationships [20].

AD is a common cause of inappropriate sexual behavior ISB. Despite the few studies discussing sexual aspects in AD, existing reports indicate that up to 25% of patients suffering from AD have ISB, including sexual urge and hypersexuality [21–23]. These behaviors result in increased clinicians and caregivers’ burden, excessive use of psychoactive medications, undue use of healthcare resources, and early institutionalization [21].

Neurobiological changes may result in a strong impulse to have sex, changes in sexual derives, sexual aggression, anger in response to rejection, or, in the opposite direction, in total withdrawal [24]. During the early stages of AD, the sexual desire frequently increases or, alternatively, there is a complete cessation [24]. The frontal lobes, the temporo-limbic system, the striatum, and the hypothalamus have been implicated in the neurobiology of ISB. Each zone is thought to have different function, and we could predict the type of inappropriate behaviors associated with each zone [25] (Table 2) (shown in Fig. 2). Alterations in sexual functioning may be the result of the neurodegenerative disease itself and also the medications, for example, benzodiazepines, which are used in cases of agitation or extreme anxiety, can cause a decrease of sexual inhibition [24]. Depression is a common comorbidity seen in people with AD [26]. Most of the antidepressant medications, including tricyclic antidepressants, selective serotonin reuptake inhibitors, and dual noradrenergic/serotonergic reuptake inhibitors, have been reported to be associated with sexual dysfunction in both sexes [27]. Depressive symptoms, such as bad self-esteem, sleep disturbance, and apathy also have an effect on patient’s sexuality [3].

The frontotemporal dementia (FTD) is a subtype of neurodegenerative dementia. Most of the cases of FTD are discovered between the age of 50 and 60 years, but some patients may develop the symptoms after 70 years but it is still rare. It is more common in males than in females [3]. Behavioral variant FTD (bvFTD) may be a cause of impulsive behaviors, increased sexual desire, urges, and excitement with sexual disinhibition and hypersexuality. The main features of bvFTD are social,

| Cerebral region         | Symptomatology                      |
|-------------------------|--------------------------------------|
| Frontal lobe [28]       | Disinhibition                         |
|                         | Exposing                              |
|                         | Public masturbation                   |
| Striatum [25]           | Obsessive-compulsive sexual behaviors |
| Temporolimbic region    | Increased sexual drive                |
| [25]                    | Klüver-Bucy syndrome                  |
| Hypothalamus [25]       | Hypersexuality                        |

Table 2. Neurobiology of inappropriate sexual behaviors
emotional, and behavioral changes resulting from neuro-pathological changes in ventromedial frontal and anterior temporal lobes [28–31]. Studies reported hypersexual behavior among 8%–18% of bvFTD patients. These patients exhibit repetitive engagement in sexual acts despite the risk of harming themselves or others [28]. Dementia patients with frontal lobe dysfunction habitually react impulsively to stressful situations involving ISB without concern for the consequences [3, 28]. Neuropathological changes in the frontal lobe can cause hypersexual disorder, sexual disinhibition, and bad judgment. In the study of Mendez et al. [28], they concluded that bvFTD is associated with hypersexuality. Their study concluded that bvFTD is not only more than just cognitive impairment with frontal disinhibition but also involves alterations in sexual behavior, possibly from right anterior temporal-limbic involvement [28]. The study of Nordvig et al. [25] shows that the alteration of higher order cognitive zones may play an important role in sexual dysfunction. Network circuitry underlying these cognitive functions is often activated in sexual relations. Nordvig proposes that sexual dysfunction in bvFTD and AD is more nuanced than is commonly believed and proposes that bvFTD and AD atrophy may correlate neuroanatomically to brain regions that contribute to the higher order cognitive aspects of sexuality such as empathy, motivation, reward recognition, decision-making, and emotional transmission [25].

Huntington’s disease (HD) is a neurodegenerative disease. Early changes that may precede clinical manifestation of movement disorder include executive dysfunction and behavior changes [32]. Not only the HD can also cause hypoactive sexual disorder but also increased sexual interest, paraphilia, hypersexuality, and major changes of sexual derive were found. The prevalence of sexual dysfunction ranged up to 85% in men and 75% in women [33]. Changed sexual interest and sexual disinhibition can create serious consequences for patients and their families due to the sociopsychiatric consequences. Sexual abnormalities have been reported early in the disease. In his original description of HD, George Huntington wrote about “two married men with HD who are frequently making love to some ladies, not seeming to be aware that there is any impropriety in it” [34]. There is no evidence that sexual dysfunction is mainly a specific symptom of HD and may be associated with the specific brain lesion itself or if it is chiefly related to the psychosocial factors caused by the steadily worsening of the disease [33]. The involvement of the medial striatum of the basal ganglia in this disease may explain the prevalence of ISB [34, 35].
Abnormal Sexual Behaviors

A broad spectrum of abnormal sexual behaviors can emerge in Alzheimer’s disease and other dementias [36] (Table 3). These inappropriate sexual behaviors could be subdivided into two groups: negative (sexual inhibition) and positive (excessive request). Examples of “positive symptoms” include suggestive language, implied sexual acts (e.g., viewing pornography in public, requesting unnecessary genital care), and overt sexual acts (e.g., touching, kissing, hugging, disrobing of self, public masturbation). Negative symptoms include decreased sexual interest, impaired sexual function that causes distress, perceiving sexual activity as unpleasant, and total withdrawal from sexual activities [37, 38].

A 2019 review reported an overall trend toward decreased sexual activities with cognitive impairment [38]. Hypersexuality and impulsive sexual acts are more frequently observed in FTD [28].

Dementia, Institutionalization, and Sexual Behavior

Inappropriate sexual behaviors are estimated to occur in about 7%–25% of demented patients with higher prevalence seen in institutions and in patients with more severe cognitive impairment [39]. For the patients suffering from cognitive impairment, living in a long-term care institution leads to big changes in lifestyle and creation of an environment that limits privacy and sexuality expression. Thus, patients are inclined to discuss their sexuality indirectly with caregivers and they are not comfortable with sexuality issues in general [1, 9, 40]. As dementia is characterized by progressive deterioration of different cognitive capacities especially memory, language, and reasoning capacities, patients with dementia gradually lose their autonomy. Consequently, the question emerges as to whether or not permission given to these patients to engage in sexual acts. Permitting sexual relations between dementia patients in healthcare institutions is always a delicate subject to discuss and creates confusion among caregivers [24]. When an old person suffering from cognitive impairment is admitted to a nursing home where the caregivers are expected to discuss subjects touching the sexuality, the resident may behave in a variety of ways, ranging from understanding to sarcasm, embarrassment, confusion, or even anger and violence [24].

Institutionalized patients, even those with advanced cognitive impairment, need to express their sexuality. Therefore, it is necessary to assess the capacity to consent for sexual acts among residents with dementia and to reassess capacity as the cognitive problem progresses [40, 41]. The competency of these patients to engage in sexual relations may be underestimated by healthcare staff when focusing on the concept of autonomy. Therefore, the issue of consent is an important point of discussion among staff members and each case should be assessed separately [9, 42]. A patient suffering from dementia may not be able to understand his or her partner’s demand to stop sexual act. Dementia patients may become confused during sexual acts, making consent uncertain. If institutionalized patients approach the caregivers expressing sexual needs, the capacity of each participant should be assessed and documented [41, 43]. Rosen et al. [41] recommend in their study an initial assessment by a geriatrician, an internist experienced in the care of older adults, or a psychiatrist. The study of McAuliffe et al. [44] indicates that sexual health and sexual needs are not routinely evaluated in institutions and staff members do not systematically do a sexual health evaluation.

Most of the sexual aggression against the elderly occurs in institutions [45–47]. Fellow residents are the most common perpetrators, often due to ISB caused by demen-
This resident-to-resident sexual aggression (RRSA) is a serious problem with physical and psychological consequences for victims. RRSA may be due to disinhibited hypersexual behavior that occurs in older adults with AD or bvFTD [22, 28, 41]. Teaster et al. [47] studied 82 victims of sexual abuse and they reported that, in general, sexual abuse in the elderly involves kissing, inappropriate touching, and fondling. The majority of perpetrators are nursing home residents and, in most cases, witnesses are other residents [47]. Sexual abuse can happen to any older person and can occur in institutions or at home. Therefore, the perpetrator can be one of the surrounding people or a stranger [47].

Ethical Aspects

Maintaining the delicate balance between facilitating sexual expression and ensuring that patient’s safety from inappropriate behaviors is a real challenge for physicians and staff members. Although RRSA occurring in institutions has significant consequences and would pose many ethical questions, it remains poorly studied [41, 46, 48]. Staff members’ attitudes often lead to discomfort in dealing with sexual desires of residents in nursing homes [48–50]. Authors discussed in many occasions the ethics of allowing and facilitating sexual relations in healthcare institutions [40, 51]. To assess the ability of nursing home residents especially those suffering from dementia to participate in sexual relationships, staff should evaluate each resident’s consent capacity. This evaluation should be based on many aspects mainly the resident’s capacity to perform sexual acts voluntarily and to understand the consequences of his/her actions [9, 40–42]. However, evaluating the capacity to consent of cognitively impaired older adults is still difficult and not absolute [43]. Certain individuals may have the capacity to consent to specific sexual acts but not to others or to consent to sexual acts with specific partners but not with others [41]. Another challenging ethical issue is whether to permit sexual relations between married residents when one partner suffers from advanced cognitive impairment and becomes unable to consent [41, 52].

Keeping a good balance between the resident’s sexual rights and his safety is often a difficult mission. However, it is encouraging to see institutions focusing more on sexuality and creating more flexible rules to facilitate sexual relations that can be beneficial for the patients suffering from cognitive impairment. A recent review noted a new more tolerant attitude toward sexual relationships in nursing homes, with increased staff education and the application of more flexible policies [41]. With these more tolerant sexual policies, it is important to be aware of potential dangers and to ensure that all partners engage in these relations safely and with a good understanding of the consequences [40–42].

Management of Inappropriate Sexual Behavior in Dementia Patients

To decide the best method to manage ISB, the assessment should include good history-taking, physical examination, laboratory tests, and medication review. We should be also aware of the frequencies of ISB, circumstances, and consequences [36]. Sexual history is an essential part of the assessment of ISB in dementia patients. If the patient is severely impaired, then a history should be obtained from the relatives. Furthermore, a neuropsychological examination may be useful in evaluating the patient’s level of cognitive impairment. The choice of treatment strategy depends on the type of ISB, the situation, and the underlying mental and medical comorbidities. Both pharmacological and nonpharmacological methods have shown good results [21].

Regarding the assessment and management of ISB in dementia, caregivers should be able to recognize signs of nonconsensual sexual acts [41]. ISB should not be underestimated, as they may lead rapidly to potentially dangerous consequences or may be associated with other improper dementia-related behaviors such as verbal and physical aggression. It is therefore necessary to evaluate all persons involved, ideally in a multidisciplinary way [40, 41, 53]. Clinicians and caregivers should be experienced in managing dementia-related inappropriate behaviors including ISB. Their management strategies should be guided by the literature identifying pharmacological and nonpharmacological approaches [54, 55].

Pharmacological Methods

As a general rule, pharmacological treatments should only be used when all other nonpharmacological approaches have failed. Moreover, starting medications, in the elderly, should be at a low dose and increasing the dose slowly if needed. It is therefore important to be aware of possible side effects of these medications; stopping medication that can trigger or worsen ISB. In dementia, clinicians should avoid medications like benzodiazepines, as they can worsen cognitive impairment, increase risk for falls, and may cause disinhibition. Medications believed to be effective in the treatment of ISB include selective serotonin reuptake inhibitor, antipsychotics, antiandrogen, and cholinesterase inhibitors [21, 39].
Selective Serotonin Reuptake Inhibitor
The antiobsessional and anxiolytic effects of this group of medication are found to decrease ISB [21, 39, 56].

Antipsychotics
These drugs are thought to decrease ISB by their dopamine-blocking effects, antiobsessional, and antilibidinal effects [21, 39].

Trazodone
Is a presynaptic reuptake inhibitor and a mild postreceptor agonist of serotonin. Simpson et al. [57] reported a case series of 4 patients with dementia and ISB who had failed to respond to antipsychotics and benzodiazepines but responded to trazodone [39, 57].

Antiandrogens
Cyproterone acetate and medroxyprogesterone acetate decrease serum testosterone level and that impairs sexual functioning and improves ISB [21, 39].

Cholinesterase Inhibitors
Donepezil, rivastigmine, and galantamine have been found to be effective in treating cognitive impairment and behavioral problems in dementia patients in early stages of the disease [39, 58]. However, there are no reports on the use of these treatments in the management of ISB associated with dementia [21, 39].

Nonpharmacological Methods
Behavior Remodeling
It is essential to explain to the patient why such behaviors are unacceptable. Caregivers should not ignore these improper behaviors, as this may reinforce them. However, it is recommended to avoid excessive confrontation, as it may cause guilt. Distraction methods may be helpful for some of the patients. For nursing home residents, private rooms and conjugal or home visits may help to improve ISB by satisfying the patient’s sexual needs. Avoidance of sitting a male resident who is making improper behavior near to female residents in the common areas is recommended. Avoidance of overstimulating television or radio is also recommended. Adequate social activity is helpful for these patients. For male patients with a tendency to nudity or masturbation in public, trousers that open in the back or that have no zippers may be helpful [9, 21, 41, 59].

Supportive Therapy
This approach may be helpful for partners who often need explanations that this improper behavior is one of the symptoms of dementia and not a reflection of the couple relation. It is also important for them to understand that their partner’s sexual expressions may be considered calls for compassion [21].

Discussion
The overall objective of this review is to examine the arguments and concepts about the debate on sexuality in dementia. Sexual activity decreases with increasing age but many old adults remain sexually active including people living with dementia. Attitudes toward sexuality in dementia are evidentially influenced by prejudice and stereotypes embedded in the culture, not only among the general public but also among healthcare workers [60, 61].

Sexual behavior and well-being of patients with dementia and their partners are affected by many factors, including cognitive impairment, mood disturbance, anxiety, sleep disorders, motor disabilities, medication effects, and relationship issues [14, 15]. A broad range of sexual behavior changes is reported in dementias. The common sexual problems are decreased desire, indifference, sexual dissatisfaction, apathy associated with hypo-sexuality or ISB such as disinhibition and hypersexuality [62]. Occasionally, physical aggression may result if sexual needs are not met [41]. These behavioral problems are distressing for patients, partners, and caregivers [40]. The prevalence of ISB in people with dementia is estimated to be 4%–5% to 25%. A significant positive association was found between ISB and the severity of dementia. However, ISB was described even at a very early stage of dementia [36].

Neurodegeneration may result in ISB that is challenging to manage. Impaired patients who become incapable of appreciating or respecting moral or legal boundaries may display abnormal sexual behaviors. This ISB should be seen as a part of the symptom cluster of behavioral changes associated with neurodegeneration [62]. The neurobiology of ISB is still only poorly understood but evaluation and intervention are recommended as soon as ISB appears. ISB often results in embarrassment and anxiety in caregivers and the result is often disruption in continuity of care for the patient at home, leading to hospitalization or placement into nursing homes [36].

Admission to a nursing home does not automatically diminish the need and the desire of patients with dementia for sexual fulfillment. The sexual expression of residents remains a sensitive subject for many caregivers. It
evokes many ethical concerns, especially when a patient is involved in unconvertable situations. The lack of conceptualization indicates that there is a pressing need for better defined ethical rules [40, 41, 46]. The diagnosis of dementia raises many questions about ability to give consent. Ethical questions often arise when balancing safety versus freedom. Finding this balance between safety and freedom is an ethical dilemma. Too often, in healthcare institutions, we needlessly sacrifice freedom for safety [40].

ISB are difficult to manage; there are no practice guidelines available for the treatment of ISB in demented patients. The optimal management of ISB demands a thorough evaluation including medical and sexual history, physical examination, and medication review. The history should cover potential precipitants, consequences, frequencies of ISB, when and where ISB occur, and with whom [62, 63]. In clinical practice, the treatment of ISB in dementia patients seems to be a matter of trial and error. However, principles of management include carefully documented evaluation and initial use of nonpharmacological approaches [55]. ISB urges the use of nonpharmacological methods to prevent unnecessary use of pharmacologic interventions [54]. When nonpharmacological approaches are ineffective, psychotropic medication may be used [36].

Conclusion

Cognitive decline, disorganization, and inappropriate behaviors are core features of neurodegenerative dementias. Four brain regions are involved in the neurobiology of ISB: the frontal lobes, the hypothalamus, the striatum, and the limbic system. Healthcare providers should be vigilant for signs and symptoms of ISB and they must be educated to manage this condition. All patients with ISB should be seriously evaluated, ideally in a multidisciplinary way in order to establish a treatment plan. ISB are often best managed by nonpharmacological approaches, as patients may be less responsive to pharmacological treatments.

The discussion of sexuality in patients suffering from cognitive impairment raises many medical, social, psychological, and ethical concerns. This is part of its challenge and interest. Surely, a single study cannot cover every aspect. Therefore, this review focused on the most common problems that we meet while dealing with this issue.

Our point is that sexual needs of dementia patients are still important for their well-being and it cannot be separated from the rest of their lives. In spite of neurodegenerative process, cognitive decline, and different comorbidities, sexuality remains an essential aspect of dementia patients’ life.

This review aimed to shed light on important information about sexuality of patients suffering from dementia. We have also discussed the important point of acceptability of sexual expression which is mandatory in the management and treatment of sexual problems in dementia patients.

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