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Behavioural changes in institutionalised older people: a gender perspective

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Abstract. There is a need to redefine and improve the treatment and care given in residences for the elderly from a non-pharmacological perspective that fosters person-centred care. In particular, the psychological and behavioural symptoms associated with dementia require a multidisciplinary evaluation to design appropriate interventions. The objective is to evaluate behavioural disorders in a group of residing elderly people and analyse whether the gender of the participants influences the presence of these behaviours. In the methodology, the group is consisted of 450 people, 73.6% women and 26.4% men with an average age of 86.82 (WD=8.22). The results show that women have a greater risk of presenting behavioural disorders. Men tend to present higher levels of anxiety, lack of inhibition, sleeping disorders, and loss of appetite; while women present more affective symptoms such as anxiety, euphoria, or apathy, or more psychotic symptoms such as delusions and hallucinations, and more aberrant motor behaviours. This influence is only significant for delusions and aberrant motor behaviour. The discussion and conclusions of the study show that gender influences behavioural disorders. This type of research work is very scarce because may be of great interest to develop and improve preventive strategies and non-pharmacological use of these symptoms in residence for the elderly settings.

Keywords. Behavioral disorders; dementia; gender; residency; psychopharmaceuticals

1. Introduction

Recent socio-economic events in the aftermath of the COVID-19 pandemic have led to a growing interest in improving the intervention, treatment and care of older people (Bonanad, 2020). One of the major problems affecting this sector of the population are neurodegenerative diseases, specifically dementias, which have already become one of the main causes that can affect the autonomy of the elderly (Barragán, García, Parra and Tejeiro, 2019).

The neurodegenerative process associated with a set of cognitive, physical and behavioural symptoms caused by brain dysfunction has a great impact worldwide, as it was indicated in the World Alzheimer's Report published in 2018. This report shows that approximately 50 million

people worldwide are living with dementia since 2018, and this number is expected to increase up to 152 million by 2050. In addition, the report points out that the data on the costs of this disease is also alarming, since it currently represents the expenditure of 1 trillion dollars, a figure that will reach twice as much in just 12 years. More women than men are affected by Alzheimer's disease (Vega-Quintana, Moreno-Cervantes, Prado-Hernández, Luna-Torres and Torres-Gutiérrez, 2018).

The behavioural symptoms derived from Alzheimer's disease and other dementias are called Behavioural and Psychological Symptoms of Dementia (BPSD) and refer to the heterogeneous set of alterations in perception, thought content, mood and behaviour which occur in patients diagnosed with dementia (Finkel, 1997). Signs such as anxiety, apathy, psychotic disorders or sleep disorders, among others, are considered to be BPSD. In recent years these behaviours have become particularly relevant as they involve changes and problems for the patients themselves and their social and family environment. This causes a greater loss of functional ability and autonomy for the person who suffers them (Kales, Gitlin and Lyketsos, 2015), greater stress for their caregivers (Steinberg et al, 2014) and even more medical prescriptions of psychotropic drugs to alleviate the symptoms (López-Trigo et al. 2014). Therefore, there is an increasing cost to treat the disease and greater risks of side effects derived from the medication (Gómez-Aguirre et al., 2017).

For these reasons, many authors consider that the presence of these symptoms is one of the causes why it is decided to admit a person with dementia to a residential center (Abraha et al., 2017), which results in a large workload for the work force and resources. In recent years in our country, the number of people in residences for the elderly has almost tripled and there is growing interest in improving the care and service that people receive in residences for the elderly (IMSERSO, 2017). The majority profile in the residences are people over 84 years old and women with multiple diseases (Abellán, Ayala, Pérez, Pujol, 2018).

From a humanist perspective, Kitwood (1992) called "person-centred care" the model that emphasises that to care or to accompany a person with dementia we should not focus solely on their illness, neurological damage or medical condition; but focus on taking into account their environment, their life history, their tastes, their preferences, their dignity and their needs. In this line, in a recent systematic review conducted by Bastida, Clemente, Font and Cardona (2018) in which they included ten studies, the authors concluded that the premorbid personality can also influence the intensity, frequency and type of BPSD that people present. More and more studies prove that the structure of the brain and personality are highly influenced by gender. A likely explanation for this is the hormonal interactions or the structure of the brain (Nostro, Müller, Reid & Eickhoff, 2017). Ho, Wetzels, Bor y Zuidema (2016) analyzed the influence of gender on SPCD in a sample of 1609 institutionalized older people in Germany. This study found that women were more likely to be anxious and men exhibited more aggressiveness and inappropriate behaviors.

This perspective is particularly interesting when evaluating and intervening in this type of symptoms. On many occasions, there is a tendency to intervene with psychoactive drugs as antipsychotics when these behavioural alterations appear, which results in a very high number of institutionalized older people who are prescribed one or more psychoactive drugs (Pinazo-Hernandis, Pinazo-Clapés and Sales-Galán, 2019). This type of drug has been shown to have a large number of extrapyramidal adverse effects in older populations (Agüera, Moriño, Olivera, Pla and Azanza, 2017) which do not compensate for the limited benefits they demonstrate in the management of behaviours such as irritability or aggression, so it is important to make a correct risk/benefit assessment (Olazarán-Rodríguez et al., 2016).

Therefore, the need to rationalize the use of psychotropic drugs in older populations and to propose non-pharmacological interventions as a first line of treatment is increasingly

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emphasized, due to the lack of associated side effects (Dyer, Harrison, Laver, Whitehead and Crotty, 2017). Specifically, to intervene non-pharmacologically on these symptoms it is necessary to make a proper assessment of environmental, psychological and biological factors that may influence their intensity and frequency of occurrence (Olazarán-Rodriguez, Agüera-Ortiz and Muñiz-Schowert, 2012), and always intervene under the prism of the model of comprehensive care focused on the person (Martínez, 2016) already defined.

For all the above reasons, we have analysed the BPSD from a gender perspective since there are few works that have included this variable in our country and it can be very useful to evaluate and design preventive interventions which can facilitate to professionals in dealing with those BPSD. The objective of this work is to evaluate the BPSD in a spanish sample of institutionalized elderly people and to analyse if there are differences between the symptoms showed by men and women.

2. Method

1.1. Participants

This research takes a group of 450 institutionalized elderly people currently living in two residential centers in the Valencian Community (Spain). Out of this group, 331 of the participants in the study are women (73.6%) and 119 are men (26.4%). The average age of the full group is 86.82 (WD=8.22). As an inclusion criterion, it was taken into account that the people were living in the residential center during the course of the research. The average time that they had been living in the residential center was 18.51 months (WD=31.90). Cognitive status was assessed using the spanish versión of Mini-Mental Status Examination (MMSE) by Lobo. The mean of cognitive empairment in this sample is 16,10 (DT=10,95) which corresponds to a moderate cognitive impairment. 25% of the sample had no cognitive impairment, 17% mild cognitive impairment, 35% moderate cognitive impairment and 43% severe cognitive impairment.

1.2. Instruments

The Neuropsychiatric Inventory Questionnaire (NPI-Q) by Cummings et al., (1994) which is the reference instrument in most research, was used to evaluate the behavioural disorders. This scale assess twelve symptoms: anxiety, depression, apathy, euphoria, irritability, hallucinations, delusions, agitation/aggressiveness, sleep disorder, eating disorder, disinhibition, and aberrant motor behaviour. In this study the symptoms are classified as either present or not present during the four weeks prior to assessment. The detection of symptoms is made by professionals of the center who are in direct contact with the people, sharing their observations.

It should be noted that all the participants in the study signed a consent form for the transfer of their data, so the results were collected once the corresponding permission had been obtained from the technical management of the group and from both centers.

1.3. Procedure

Firstly, the 450 institutionalised older people were assessed.

Geriatric assessment meetings were convened with the direct caregiver professionals. At this meeting, all the professionals commented on the data for each person individually and assessed them among all the BPSDs presented by each person, since these symptoms are measured through the NPI, which is an observational scale. That is why it is important that they are contrasted and assessed among several observers. In this meeting, the areas of communication and participation in the center's activities are also evaluated.

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1.4. Analyse

This is a transversal descriptive study and the statistical evaluation was performed through Pearson Chi-squared tests. All statistical analyses were made with the statistical program SPSS 23.

3. Results

The research findings are presented below. Overall, 65.55% of the men in the sample have a BPSD or more, compared to 73.41% of the women.

Specifically, each of the symptoms has been evaluated separately and the data obtained are presented in the following table.

Table 1. Percentage of BPSD based on gender

BPSD	% Male	% Female	χ_1^2 (1)	p-value	Odds Ratio [IC95%] (Absence/Presence)	
					Male	Female
Delusions	15,96	26,28	4,62	0,032*	1,62[1,04;2,51]	0,86[0,77;0,96]
Hallucinations	4,20	7,25	0,89	0,35	1,57[0,69;3,54]	0,88[0,74;1,05]
Agitation/Aggression	26,89	19,64	2,31	0,13	0,75[0,53;1,05]	1,13[0,97;1,31]
Anxiety	19,33	22,66	0,39	0,53	1,16[0,78;1,73]	0,95[0,84;1,08]
Euphoria	0,84	2,11	0,25	0,62	2,14[0,39;13,45]	0,84[0,64;1,09]
Apathy	10,92	14,80	0,80	0,37	1,30[0,78;2,17]	0,92[0,79;1,06]
Depression	21,24	26,01	0,69	0,41	0,86[0,63;1,17]	1,06[0,94;1,19]
Disinhibition	8,40	7,55	0,01	0,92	0,91[0,53;1,59]	1,03[0,83;1,28]
Lability/Irritability	17,65	17,22	0	1	0,98[0,65;1,46]	1,01[0,87;1,17]
Aberrant motor behaviour	7,56	15,11	3,73	0,04*	1,84[0,99;3,44]	0,85[0,75;0,96]
Sleeping disorders	13,45	10,88	0,34	0,56	0,84[0,54;1,31]	1,07[0,89;1,29]
Eating disorders	10,08	8,16	0,20	0,65	0,85[0,51;1,39]	1,07[0,86;1,33]

(1) Yates's correction for continuity
* p-value<0.05; ** p-value<0.01; *** p-value<0.001

To see if there is a significant relationship between gender and the different variables evaluated, the Yates's Correction for Continuity test was used.

In the case of deliriums, the influence of gender is significant since p=0.032<0.05, with 14% more cases of delirium among women. In the case of aberrant motor behaviour, a symptom for which the influence is also significant since p=0.04<0.05 with women having 15% more cases.

4. Discussion/Conclusions

The number of men and women with a BPSD or more is very high, which supports results taken, for example, by Helvik, Selbaek, Saltyte, Roeh and Bergh (2018) who found that 61.9% of institutionalized older people had a BPSD or more. The influence of gender on this variable creates controversy in the literature; our research finds that the percentage of women who

present one or more BPSD is higher than that of men. There are data that support this difference, for example, the study by Tao et al. (2018) states that 47.6% of women had 2 or more symptoms compared to 39.8% of men. But we have also found studies opposed, such as one conducted by Yatawara, Hiu, Tan and Kandiah (2018) who found that men were at greater risk of presenting this type of disorder.

Our research has found significance in aberrant motor behaviour and delusions, both of which are more frequent in women, which was also defended by Tao et al., (2018), who add that women are more likely to present delusions and hallucinations in vascular dementias or lack of appetite with a diagnosis of major depression, while men with this same diagnosis tended to present greater agitation.

The work of Ho, Wetzels, Bor and Zuidema (2016), which included a study on 1600 institutionalized elderly people, found results very similar to those of our research. According to these authors, in the case of institutionalized people, men present greater agitation or inappropriate behaviours but women present affective symptoms such as depression or anxiety, to a greater extent. These data are consistent with those found by the European Health Survey (Ministerio de Sanidad, Servicios Sociales e Igualdad, 2014) in which women report more mental health problems such as anxiety or depression. In fact, Carreira and Facal (2017) also state that women are more likely to be diagnosed with anxiety.

These differences could have several explanations: anatomical, biochemical, neurochemical or psychosocial, as Ho, Wetzels, Bor and Zuidema (2016) defend. For example, authors Rancine et al (2012) state that male patients are less likely to have mood disorders and anxiety problems due to neurochemical causes, and have a different resistance for pain than women. Women tend to experience more physical pain from life experiences such as pregnancy, childbirth or menopause; and psychologically they endure more stress from roles such as being mothers or primary caregivers (Esteban and Alvarez, 2019).

The work of Tao et al. (2018) states that complaints, aberrant motor behaviours, anxiety and delusions were more common in women; while agitation and apathy were more common in men. The results of our research go in the same line since we have found differences in these variables but the differences are not statistically significant except in the case of aberrant motor behavior where significance is appreciated.

In general, the fact that the gender variable influences the presence of BPSD creates controversy in the literature. This may be due to the fact that there is a possibility there are other variables that are affecting the onset of these symptoms to a greater extent, such as the stage of dementia or deterioration, as some authors have shown (López-Alvarez and Agüera-Ortiz, 2015). The type of dementia is also a variable that can influence the presence of BPSD and this is something important to highlight since in many cases there is no diagnosis of dementia. Makimoto et al. (2018) stated that only 44% of the participants with dementia showed in their study had a diagnosis specifying the type of dementia. In our study, 13% of people with dementia had a diagnosis of unspecified dementia.

We can conclude that there is a greater presence of BPSD in women living in residences for the elderly. This gender influence also affects the presence of specific symptoms. Men tend to present higher levels of agitation, disinhibition, sleep disorders and loss of appetite; while women present more affective symptoms such as anxiety, euphoria or apathy, more psychotic symptoms such as delusions and hallucinations and more aberrant motor behaviour. It is important to read these data carefully as the influence is only significant in the case of delusions and aberrant motor behaviour.

In future studies it would be interesting to have a more heterogeneous group to conduct the study, people who live in other residences and other places in Spain with a higher percentage

of male patients in the study. In addition, it would be interesting to make a study of correlations between gender and BPSD as an ordinal variable and not as a nominal dichotomous variable.

It is important to point out that these results may be of great interest to evaluate, implement and improve environmental preventive strategies and non-pharmacological management of these symptoms in residential centers. It is becoming increasingly necessary to work in these centers with non-pharmacological strategies that include a correct multidimensional assessment of these symptoms that allows interventions to be made according to the real causes of their onset (Pieper et al., 2018). In addition, it is important to point out that an appropiate management of these symptoms, which makes them diminish without over-prescribing psychotropic drugs, will facilitate the creation of life-enabling environments, which have been shown to be so important and appropriate for promoting interpersonal relationships, improving self-esteem or increasing positive affection in institutionalised older people, among others (Pinazo-Hernandis and Pinazo-Clapés, 2018).

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