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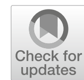

TARGET ARTICLE (WITH PEER COMMENTARY)

Bullying and Factors Contributing in Alzheimer's Disease

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Abstract The aim of the study is to examine bullying and factors contributing to the same in Alzheimer's disease. It was conducted with twenty-nine non-medical care workers in Alzheimer's care centers in Turkey. The data were collected with the sociodemographic form, a questionnaire form prepared by the researchers, and face to face interviews. The study determined that patients experienced bullying such as conflicting, punching, and ridiculing. In addition, personality traits, psychiatric disorders, communication skills, consistent behaviors, degree of the disease, and other disorders/difficulties were evaluated to be effective in the exposure of bullying. The results of this study are important because they reveal the bullying that patients have experienced. Also, there is a need to develop a scale for assessing bullying in patients with Alzheimer's disease.

Keywords Alzheimer's disease · Bullying · Caring · Elderly

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Introduction

Alzheimer's disease (AD) is a neuro-degenerative and irreversible disease, which is difficult to treat completely and causes progressive loss of both cognitive and physical functions. Loss of independence in the patient is associated with memory, praxis, and visual-spatial and executive dysfunctions, aphasia, posterior cortical atrophy, and frontal lobe degeneration (Zvěřová, 2014). Loss of memory is a frequent phenomenon in patients with AD. As the disease progresses, speech and linguistic problems, behavioral and personality changes, decrease in the ability to judge, difficulty in understanding and expression of ideas, impulsiveness, and inappropriate behaviors are added to the symptoms. Consequently, these changes occurring in the patients may negatively affect the patient and those accompanying them physically, emotionally, and psychologically (Cooper et al., 2006; Melo et al., 2017; Mohamed et al., 2010; Zvěřová, 2014). Age is an important factor in this disease. The prevalence of AD is 6–10% over the age of 65 and 30–47% over the age of 85. The prevalence doubles every five years after the age of 60 (Adalı et al., 2020). Both old age and the effects caused by the disease increase the difficulties that patients may experience. Therefore, it is important to protect patients from physical, economic, emotional, and relational harm (Farina et al., 2017; Häikiö et al., 2019). These harm, which are defined as bullying in the literature, cause many cognitive, behavioral and emotional problems of the patient and the elderly (Altunöz et al., 2015; Kiosses & Alexopoulos, 2014).

Bullying is the use of aggressive behavior, threat, imbalance of power or coercion. Bullying does not include empathic attitude/behavior and it causes unpleasant feelings in individuals who experience bullying (Hornor, 2018;

Mishna, 2012; Zuckerman, 2016). Bullying may be verbal, physical, relational, and cyberbullying. There can be issues such as emotional intimidation, sexual bullying, and racist bullying too (Mishna, 2012; Paat et al., 2020). There can be workplace bullying faced by the elderly in their post-retirement (Tripathi & Agarwal, 2019). Patients with AD cannot meet their basic needs such as eating, dressing, and toilet because of both the elderly and the symptoms of the disease. As the disease progresses, delusions, hallucinations, doubts, aggression, and accusations occur. These cause many difficulties for caregivers and other individuals in a close relationship with the patient (Shafei et al., 2017). In particular, patients with AD may display bullying behaviors and attitudes such as violence, jealousy, shouting, and humiliating each other. Because, they experience forgetfulness, low problem solving, dependency on others and intense stress due to cognitive, and intellectual losses (Altunöz et al., 2015; Melo et al., 2017). Some patients may be more susceptible to the harmful effects of bullying than others. As a result, patients with AD may have difficulty in expressing their physical and psychological ordeals and may be exposed to physical/emotional violence and bullying from the individuals in their environment and other members of the society depending on the progress of the disease, and cognitive and behavioral changes (Meléndez et al., 2018). Lever et al. (2019) reported that bullying causes mental health problems such as psychological distress, depression and burnout, and physical health problems such as insomnia and headache. Therefore, it is important to protect patients with AD from bullying.

In the literature, the importance of bullying is rather emphasized for children and adolescents (Garcia-Hermoso et al., 2019; Mishna, 2012; Weng et al., 2017). Garcia-Hermoso et al. (2019) stated that bullying leads to low sense of self, anxiety, introversion, distrust, hyper sensitivity, and avoidance of social activities. Weng et al. (2017) reported that bullying decreases life satisfaction and increases depression. Although this phenomenon is equally important for patients with AD, who can be referred to as adult children, no studies on this subject have been founded in the literature. Lampert et al. (2014) suggested investigating the bullying in the elderly, to focus on prevention and early detection. Therefore, the study aimed to examine bullying and factors contributing to the same in AD.

Methods

Study Design and Setting

This study has a mixed method design. The study was carried out with twenty-nine non-medical care workers in two Alzheimer's care centers in Turkey. There were 82 patients with AD in these centers. The study was completed between May and June 2019.

Instruments

Sociodemographic Form

The form included questions about the patient's age, gender, marital status, number of children, and the non-medical care workers' gender and age.

Bullying Questionnaire Form

This form included a questionnaire form prepared by the researchers. It consisted of questions about the bullying experienced by the patients. This form was prepared by the researchers using the literature (Kutlu & Aydin, 2010). These questions have allowed determination of conflict, punch, gossip, nick name, bad-mouth, torment, ostracize, threat, offend, push, provoke, and ridicule.

The following questions were used to examine factors contributing to bullying in AD:

- Which bullying behaviors do you observe in patients with AD? Please explain.
- What does this bullying behaviors mean for patients?
- What do you think about patients doing something harmful or malicious to other patients in practice?
- What do you think affects these acts and emotions in patients?

Data Collection

Before the study, permissions were obtained from the ethics committee and the institutions. The aim of the study was explained to non-medical care workers and verbal consent was taken. After they filled out the sociodemographic form, the form in which bullying was examined was questioned individually for each patient. The patients for whom 29 non-medical care workers were responsible were asked to fill out the forms. After that, semi-structured individual interviews were conducted with 29 non-medical care workers to examine the importance of bullying and factors contributing for patients with AD and reflections of the concepts in daily life. Face to face in-depth interviews were conducted. Each interview lasted 25 min.

Data Analysis

The data obtained were calculated frequency, percentage, mean, and standard deviation. Colaizzi's (1978) phenomenological data analysis approach was used in examining and analyzing individual interviews. In the analysis,

the verbal statements of the participants were evaluated separately by the researchers. Important statements and expressions related to the study goals were determined and meanings were formulated from these meaningful expressions and sentences. The formulated meanings were then organized into themes. To ensure the reliability of the data analysis, the transcripts were repeatedly reviewed by each researcher. Subsequently, the researchers worked independently to identify the main categories of the transcripts. The researchers compared the individual encoding, and the overall fit of the encoding was mainly with minor differences attributed to word choice. Differences were discussed until a final agreement was reached. Themes were created by combining similar expressions for each view. For the final evaluation, all researchers reviewed the themes. After data analysis in Turkish, the participants' statements were translated into English, keeping their original meaning. The English translation was then translated back into Turkish by a bilingual speaker to make sure the translation was correct. Finally, the two translations were matched for the original meaning of the Turkish version.

Results

Table 1 presents the sociodemographic characteristics. Of the patients, 65.9% ($n = 54$) were female, 80.5% (n=66) had primary school education, and 58.5% ($n = 48$) were widowed. The mean age of the patients was 80.07 ± 8.45, and the mean of the number of children they had was 2.34 ± 1.29. Of the 29 non-medical care workers who participated in the study, 82.8% were female ($n = 24$) with the mean age of 34.06 ± 11.33.

Bullying behaviors of the patients are presented in Table 2. In the study, non-medical care workers stated 15.9% of the patients conflicted with other patients, 11.0% punched other patients and gossiped, 9.8% nicknamed, 8.5% bad-mouthed, 6.1% tormented, 4.9% ostracized some patients, threatened, and offended others, and 3.7% pushed others, provoked others against some patients, and ridiculed.

The following three themes and six categories emerged as a result of the interviews about bullying and factors contributing to the same in AD with non-medical care workers.

Theme 1: Related to the Patient's Own-self

In relation to the patient's own-self, the following sub-themes were determined.

Personality Traits

Non-medical care workers stated that the personality traits of the patients had an influence on bullying. Some of these statements are given as follows:

> … Now we are able to guess which patient is likely to perform bullying and which patient will be exposed to it. If the patient is ill-tempered, selfish, and not trusting others, he/she may harm people around him/her… (Female, 49 years old).

Table 1 The characteristics of patients with AD ($n = 82$)

	n	%
Gender		
Female	54	65.9
Male	28	34.1
Educational level		
Illıterate	4	4.9
Primary school	66	80.5
Secondary school	1	1.2
High school	7	8.5
University	4	4.9
Marital status		
Spouse deceased	48	58.5
Never married	5	6.1
Divorced	3	3.7
Spouse living	26	31.7

Table 2 Bullying behaviors of patients with AD (n = 82)

	Yes		No	
	n	%	*n*	%
Conflict	13	15.9	69	84.1
Punch	9	11.0	73	89.0
Gossip	9	11.0	73	89.0
Nickname	8	9.8	74	90.2
Bad-mouth	7	8.5	75	91.5
Torment	5	6.1	77	93.9
Ostracize	4	4.9	78	95.1
Threat	4	4.9	78	95.1
Offend	4	4.9	78	95.1
Push	3	3.7	79	96.3
Provoke	3	3.7	79	96.3
Ridicule	3	3.7	79	96.3

…If the patient has a harmonious, we experience no problems. That patient causes no harm to others. He/She does whatever he/she is told to do in a calm way… (Male, 39 years old).

… Sometimes, the relatives of the patients mention that their patient had a sensitive personality dating back to his/her youth, and some relatives indirectly tell us that their patient already had an incompatible personality. Accordingly, we pay more attention to some patients… (Female, 43 years old).

Psychiatric Disorders

Non-medical care workers pointed out that the presence of a psychiatric disorder was significant in terms of the degree of bullying. Some statements are presented as follows:

… The patient's psychiatric disorder really plays a role in his/her harming or disturbing other patients. For example, a patient with depression is not harmful anyone. But patients seeing hallucinations do harm to everyone around. Sometimes they get suspicious of other patients. They do not want to see them around… (Female, 39 years old).

… As a matter of fact, since psychiatric disorder disrupts the patient's communication, it leads to behavior problems… (Male, 53 years old).

Communication Skills

Non-medical care workers emphasized the effect of communication on the potential bullying the patients might experience. They stated that communication was important in relationships. Some of their statements are as follows:

… My observation is that if the patient is able to express his/her feelings and thoughts in his/her communication with us, he/she becomes more compliant… (Female, 52 years old).

… It is important that the elderly can communicate themselves to the other party. Because an elderly who can express his/her problems gets less worn-out. But, when he/she cannot communicate his/her problem exactly, he/she gets nervous. He/she disturbs other patients as well… (Female, 30 years old).

…Patients who do not get visitors become more aggressive. However, the elderly who continue their relationship with their relatives are satisfied with their lives and consequently they are more understanding and compliant… (Female, 55 years old).

Theme 2: Related to the Patient's Diseases

In relation to the patient's diseases, the following sub-themes were determined.

The Degree of Alzheimer's Disease

Non-medical care workers pointed out that the degree of the disease had a direct impact on bullying. Some of the statements related to this issue are presented as follows:

… If the disease has progressed a lot, it may increase the nervousness of some patients and as a result they exhibit hostile behavior towards others. Some of them turn more to themselves, being exposed more to harm from others… (Female, 25 years old).

… When their diseases have progressed, the patients do not get involved in anything. They act as if they

are not alive. For this reason, bullying does not apply to them… (Male, 55 years old).

The Other Disorders/Difficulties of Patient

Non-medical care workers stated the relationship between bullying and the patients' cardiovascular diseases, speech disorders, difficulty in nutrition, and other chronic diseases. Some examples of the statements are as follows:

> … If a patient has hypertension and unstable blood pressure, he/she becomes too agitated. An agitated patient is a source of disturbance for other patients… (Male, 53 years old).
> … If the patient has no problems related to speech, nutrition, and toilet, there is no problem in this patient… (Female, 21 years old).

Theme 3: Related to the Care Worker's Attitude

In relation to the care worker's attitude, the following sub-theme were determined.

Consistency

Non-medical care workers emphasized that being consistent with the patients created a balance in their emotions, and negative feelings such as aggression and nervousness were decreased. Some examples are as follows:

> … When the patients want something and the limitations are specified, the patient predicts how you will treat him/her. In fact, other patients also observe this. Thus, establishing a limit for himself/herself, the patient tries to control his/her behaviors as much as possible. Of course, the degree of the disease positively or negatively affects this situation… (Male, 37 years old).
> … Consistent behaviors create a sense of justice in the patient. This in turn prevents jealousy… (Female, 47 years old).

Discussion

The results of this study, which examined bullying and contributing factors in AD, showed that there is a relationship between AD and older age, and patients have bullying behaviors. In the study, conflict and punching behavior were frequently expressed in patients. Altunöz et al. (2015) found that dementia patients exhibit physical aggressive behaviors such as throwing objects, hitting, kicking, and pushing, and behaviors that include abusive speech and verbal aggression. Greve et al. (2016) reported high frequency of aggression in patients with AD. Julian and Duran (2020) stated that patients with AD generally have challenging behaviors such as agitation, anxiety, and aggression. They explained these behaviors by losing memory, reasoning, communication, and problem-solving skills. AD is a progressive disease disrupting the individual's autonomy as it causes regression in cognitive, mental, and physical capacities. This disruption in the patient's autonomy manifests itself in agitation, aggression, and resistance against those living with the patient and the caregivers. Although there has been a plethora of research on these behavioral and emotional changes and disorders, the problem has not yet been thoroughly solved (Bentwich et al., 2017; Fisher & Swingen, 1997).

According to the data obtained from the interviews with non-medical care workers about the bullying situation in patients with AD, they emphasized that personality traits are important in the patient's aggression, adaptation, and threat perception. Personality is a body of traits which an individual brings with birth and is shaped under the influence of the environment (Baumert et al., 2019). AD increases patients' emotional stress by causing personality changes (Sevinçer et al., 2017). Moreover, premorbid personality is reported to play a role in the development of AD (Henriques-Calado et al., 2018; Sevinçer et al., 2017). Sevinçer et al. (2017) determined that premorbid personality traits played a role in the development of anxiety in patients with AD. They found a negatively significant relationship between an individual's tolerance for sadness and anxiety, and that this relationship could lead to a decrease in the cognitive capacities of patients with AD. They also reported that negative personality traits increased the incidence of psychiatric disorders. In the present study, non-medical care workers emphasized the relationship between bullying that patients may experience and personality traits such as compliant/non-compliant, aggressive, sensitive, and suspicious. Terracciano and Sutin (2019) reported the relationship between personality and neuropathological changes in patients with AD. As neuropathological changes in patients with AD increase, negativities in the patient's memory, judgment, behaviors, and emotions increase as well; therefore, it can be claimed that the personality traits of patients have an effect on bullying.

Another point that the non-medical care workers pointed out was the presence of a psychiatric disorder. This issue is also emphasized in the literature. Psychiatric disorders cause hallucinations, emotional and behavioral disruptions, personality changes, and negative interpersonal relations in patients with AD, thus adding up to already existing problems of patients (El Haj et al., 2016, 2017).

The non-medical care workers also put emphasis on the effect of communication on bullying. Zvěřová (2019)

reported that frontal lobe patients with AD usually behaved impulsively, impatiently and nervously and experienced aphasia, and communication disruptions. Communication difficulty is important in that it leads to patients' difficulty in expressing their feelings, thoughts, and aggression. For this reason, establishing a simple and understandable communication with patients in a way for them to understand can eliminate confusion they may experience and prevent bullying. The non-medical care workers also expressed that patients' perceived loneliness affected bullying. Especially, the communication level of the patients with their relatives and their not feeling lonely are also important. Researches show that loneliness and social isolation lead to behavioral changes and negative emotions (Olaya et al., 2017; Poscia et al., 2018). Olaya et al. (2017) reported that loneliness in the elderly suppressed the immune system, thus increasing the incidence physical and psychiatric disorders. As a result, it can be argued that the effects of loneliness are observed more in the elderly, and that this situation could result in regression in the patients' emotions, behaviors, and intellectual skills and make them vulnerable to bullying.

According to the interviews in the study, it is that the degree of AD and other disorders/difficulties affect the bullying. In studies, hippocampal and amygdala atrophy were associated with the emotional change in the patient (Phelps & LeDoux, 2005; Yang et al., 2017). Amygdala and connections between cortical areas play an important role in the regulation of aggressive behaviors of individuals. As a result of lesions related with amygdala, have difficulty in the expression of threat perception, fear, and anger and in the recognition of facial expressions (Gopal et al., 2013). Lupton et al. (2016) reported that changes in amygdala and hippocampus are indicative of AD. Moreover, they determined the genetic relationship between the volume of amygdala and hippocampus and the development of AD. When the relationship between the changes in amygdala and hippocampus and AD and the role of these centers in the regulation of behaviors and emotions are considered, it is natural to observe behavioral bullying such as conflicting with others, pushing and bad mouthing, and emotional bullying such as gossip, ridiculing and psychological harassment in patients with AD. Nevertheless, it is positive that the frequency of bullying behavior was determined to be low in study. Tomlinson et al. (2016) defined aggression and aggressive behavior toward others as negative verbal, emotional and physical behaviors and attitudes toward others and the self. Bullying is defined as negative behaviors and emotions shown toward others (Hornor, 2018; Zuckerman, 2016). Patients' communication with their environment gradually worsens, their emotional status is disrupted, and the disease can be accompanied by anxiety, depression and psychotic disorders. Hallucination, delirium, suspicion and sensitivity can be commonly observed. In some patients, delirium is added to the general table, and the patient experiences time and place disorientation (Atri, 2019; Zvěřová, 2019). As the patient loses his/her intellectual skills, he/she becomes more dependent on caregivers and the patient can be bedridden. Bullying to be experienced in addition to all these negativities can further worsen their intellectual skills such as making sense and making connections. Therefore, the elimination of bullying which was determined at a low level in patients could prevent the patients from experiencing physical, mental, emotional, social, and intellectual negativities. In the studies conducted, it was determined that sustaining the well-being of patients with AD and reducing other negativities accompanying the disease increased their autonomy and decreased their aggression (Atri, 2019; Bentwich et al., 2017). Besides, the presence of other chronic diseases leads AD to progress by causing distortion in tissue perfusion and brain damage (Jeon et al., 2019). Julian and Duran (2020) emphasized that diabetes, hypertension, and obesity can increase the risk of cognitive decline.

The non-medical care workers pointed to the significance of consistency in communicating with and treating the patients as well. In their opinion, as being consistent ensures the feeling of justice, it makes patients feel better and decreases aggression, nervousness, and jealousy. This result can be associated with patients feeling themselves safe. Consistent behaviors can fix the variability of responses given to new situations as much as possible and reduce the mental confusion the patient may experience.

Limitations

This study was conducted in two Alzheimer's care centers in Turkey. In addition, the individual, environmental, and cultural factors affecting the patients and the psychiatric problems of the patients could not be controlled. And, since a standard measurement tool was not used in this study, the reliability of the results may not be high. Therefore, these study results cannot be generalized to other national and international patients with AD. Additionally, the bullying form was prepared by the researchers did not include bullying such as teasing, forcing them to run errands, playing practical jokes, insisting on answering silly questions or that they should perform some stunts/acts, or other forms of mental, physical, coercion, and sexual abuse, physical violence or mental degrading, verbal or written abuse, exclusion from activities or social situations. The form has only allowed determination of conflict, punch, gossip, nick name, bad-mouth, torment, ostracize, threat, offend, push, provoke, and ridicule.

Conclusion

The elderly population is on the increase all over the world. This situation leads to an increase in the number of patients with AD. Accordingly, it is important to increase the awareness of healthcare professionals and other non-medical care professionals about bullying behaviors in patients with AD. In this way, they can prevent patients' already difficult lives from deteriorating and patients experiencing physical and emotional bullying. There is no scale in relation to bullying in patient with AD in the literature. There is a need to develop a scale for assessing bullying. It also can be suggested that the results of this study should be compared with bullying in patients with AD in home settings.

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Availability of Data and Material Data are not available due to [ethical/legal/commercial] restrictions. Because, due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data are not available.

Code Availability (Software Application or Custom Code) Not applicable.

Declarations

Conflict of interest There is no conflict of interest in this research.

Ethics Approval (Include Appropriate Approvals or Waivers) Before the study, permissions were obtained from the ethics committee and the institutions.

Consent to Participate (Include Appropriate Statements) The verbal consent permission was taken prior to the conduct of the study.

Consent for Publication (Include Appropriate Statements) It has the consent of publication.

References

Adalı, A., Yirün, A., Koçer-Gümüşel, B., & Erkekoğlu, P. (2020). The possible effects of biological agents on the development of Alzheimer's disease. *Ankara University Faculty of Pharmacy, 44*(1), 167–187. https://doi.org/10.33483/jfpau.523804

Altunöz, U., Özel Kızıl, E. T., Kırıcı, S., Baştuğ, G., BiçerKanat, B., Sakarya, A., Er, O., & Turan, E. (2015). Dimensions of agitation based on the cohen-mansfield agitation inventory in patients with dementia. *Turkish Journal of Psychiatry, 26*(2), 116–122. https://doi.org/10.5080/U7628

Atri, A. (2019). The Alzheimer's disease clinical spectrum: Diagnosis and management. *Medical Clinics, 103*(2), 263–293. https://doi.org/10.1016/j.mcna.2018.10.009

Baumert, A., Schmitt, M., & Perugini, M. (2019). Towards an explanatory personality psychology: Integrating personality structure, personality process, and personality development. *Personality and Individual Differences, 147*, 18–27.

Bentwich, M. E., Dickman, N., & Oberman, A. (2017). Dignity and autonomy in the care for patients with dementia: Differences among formal caretakers of varied cultural backgrounds and their meaning. *Archives of Gerontology and Geriatrics, 70*, 19–27.

Colaizzi, P. (1978). Psychological research as the phenomenologist views it. In R. Valle & M. King (Eds.), *Existential phenomenological alternative for psychology* (pp. 48–71). New York: Oxford University Press.

Cooper, C., Katona, C., Orrell, M., & Livingston, G. (2006). Coping strategies and anxiety in caregivers of people with Alzheimer's disease: The LASER-AD study. *Journal of Affective Disorders, 90*(1), 15–20.

El Haj, M., Jardri, R., Larøi, F., & Antoine, P. (2016). Hallucinations, loneliness, and social isolation in Alzheimer's disease. *Cognitive Neuropsychiatry, 21*(1), 1–13.

El Haj, M., Roche, J., Jardri, R., Kapogiannis, D., Gallouj, K., & Antoine, P. (2017). Clinical and neurocognitive aspects of hallucinations in Alzheimer's disease. *Neuroscience & Biobehavioral Reviews, 83*, 713–720.

Farina, N., Page, T. E., Daley, S., Brown, A., Bowling, A., Basset, T., Livingston, G., Knapp, M., Murray, J., & Banerjee, S. (2017). Factors associated with the quality of life of family carers of people with dementia: A systematic review. *Alzheimer's & Dementia, 13*(5), 572–581.

Fisher, J. E., & Swingen, D. N. (1997). Contextual factors in the assessment and management of aggression in dementia patients. *Cognitive and Behavioral Practice, 4*(1), 171–190.

Garcia-Hermoso, A., Oriol-Granado, X., Correa-Bautista, J. E., & Ramírez-Vélez, R. (2019). Association between bullying victimization and physical fitness among children and adolescents. *International Journal of Clinical and Health Psychology, 19*(2), 134–140.

Gopal, A., Clark, E., Allgair, A., D'Amato, C., Furman, M., Gansler, D. A., & Fulwiler, C. (2013). Dorsal/ventral parcellation of the amygdala: Relevance to impulsivity and aggression. *Psychiatry Research: Neuroimaging, 211*(1), 24–30.

Greve, M. J., DesJarlais, D., & Ahmed, I. (2016). Successful treatment of agitation and aggression with prazosin in an elderly patient with dementia and comorbid heart disease. *Journal of Clinical Gerontology and Geriatrics, 7*(3), 109–111.

Häikiö, K., Sagbakken, M., & Rugkåsa, J. (2019). Dementia and patient safety in the community: A qualitative study of family carers' protective practices and implications for services. *BMC Health Services Research, 19*(1), 1–13.

Henriques-Calado, J., Duarte-Silva, M. E., & Ferreira, A. S. (2018). Depressive vulnerability in women with Alzheimer's disease: Relationship with personality traits and abnormal personality dimensions. *Journal of Affective Disorders, 241*, 182–191.

Hornor, G. (2018). Bullying: What the PNP needs to know. *Journal of Pediatric Health Care, 32*(4), 399–408.

Jeon, S. Y., Byun, M. S., Yi, D., Lee, J. H., Choe, Y. M., Ko, K., Sohn, B. K., Choi, H. J., Lee, J. Y., & Lee, D. Y. (2019). Influence of hypertension on brain amyloid deposition and Alzheimer's disease signature neurodegeneration. *Neurobiology of Aging, 75*, 62–70.

Julian, M. K., & Duran, J. (2020). Managing challenging behaviors in patients with dementia: The use of therapy dolls. *Nursing Made Incredibly Easy, 18*(2), 38–45.

Kiosses, D. N., & Alexopoulos, G. S. (2014). Problem-solving therapy in the elderly. *Current Treatment Options in Psychiatry, 1*(1), 15–26.

Kutlu, F., & Aydin, G. (2010). Summary preliminary study of the Bully Scale development: Self-report form. *Turkish Psychological Articles, 13*(25), 13–16.

Lampert, M. A., Tognon, G. F., Corbellini, R. D. O., Welter, K. C., & Rosso, R. (2014). Bullying in elderly people. *Geriatrics, Gerontology and Aging, 8*(1), 89–91.

Lever, I., Dyball, D., Greenberg, N., & Stevelink, S. A. (2019). Health consequences of bullying in the healthcare workplace: A systematic review. *Journal of Advanced Nursing, 75*(12), 3195–3209. https://doi.org/10.1111/jan.13986

Lupton, M. K., Strike, L., Hansell, N. K., Wen, W., Mather, K. A., Armstrong, N. J., Thalamuthu, A., McMahon, K. L., De Zubicaray, G. I., Assareh, A. A., Simmons, A., Proitsi, P., Powell, J. F., Montgomery, G. W., Hibar, D. P., Westman, E., Tsolaki, M., Kloszewska, I., Soininen, H., Mecocci, P., et al. (2016). The effect of increased genetic risk for Alzheimer's disease on hippocampal and amygdala volume. *Neurobiology of Aging, 40*, 68–77. https://doi.org/10.1016/j.neurobiolaging.2015.12.023

Meléndez, J. C., Satorres, E., Redondo, R., Escudero, J., & Pitarque, A. (2018). Wellbeing, resilience, and coping: Are there differences between healthy older adults, adults with mild cognitive impairment, and adults with Alzheimer-type dementia? *Archives of Gerontology and Geriatrics, 77*, 38–43.

Melo, G., Maroco, J., Lima-Basto, M., & de Mendonça, A. (2017). Personality of the caregiver influences the use of strategies to deal with the behavior of persons with dementia. *Geriatric Nursing, 38*(1), 63–69.

Mishna, F. (2012). Theories that help to understand bullying. In F. Mishna (Ed.), *Bullying: A guide to research, intervention, and prevention.* Oxford: Oxford Scholarship.

Mohamed, S., Rosenheck, R., Lyketsos, C. G., & Schneider, L. S. (2010). Caregiver burden in Alzheimer disease: Cross-sectional and longitudinal patient correlates. *The American Journal of Geriatric Psychiatry, 18*(10), 917–927.

Olaya, B., Domènech-Abella, J., Moneta, M. V., Lara, E., Caballero, F. F., Rico-Uribe, L. A., & Haro, J. M. (2017). All-cause mortality and multimorbidity in older adults: The role of social support and loneliness. *Experimental Gerontology, 99*, 120–126.

Paat, Y. F., Markham, C., & Peskin, M. (2020). Psycho-emotional violence, its association, co-occurrence, and bidirectionality with cyber, physical and sexual violence. *Journal of Child & Adolescent Trauma, 13*, 365–380. https://doi.org/10.1007/s40653-019-00283-z

Phelps, E. A., & LeDoux, J. E. (2005). Contributions of the amygdala to emotion processing: From animal models to human behavior. *Neuron, 48*(2), 175–187.

Poscia, A., Stojanovic, J., La Milia, D. I., Duplaga, M., Grysztar, M., Moscato, U., Onder, G., Collomati, A., Ricciardi, W., & Magnavita, N. (2018). Interventions targeting loneliness and social isolation among the older people: An update systematic review. *Experimental Gerontology, 102*, 133–144.

Sevinçer, G. M., İpekçioglu, D. Y., Konuk, N., & Ertan, T. (2017). The relationship between the premorbid personality traits and the behavioral and psychological symptoms of Alzheimer disease. *Neurology, Psychiatry and Brain Research, 24*, 20–25.

Shafei, N., Abdeyazdan, G. H., Sasani, L., Abedi, H. A., & Najafei, M. R. (2017). Family care giving needs of the elderly with Alzheimer's disease (A phenomenological study). *Journal of Clinical Nursing and Midwifery, 6*(2), 48–58.

Terracciano, A., & Sutin, A. R. (2019). Personality and Alzheimer's disease: An integrative review. *Personality Disorders: Theory, Research, and Treatment, 10*(1), 4–12.

Tomlinson, M. F., Brown, M., & Hoaken, P. N. (2016). Recreational drug use and human aggressive behavior: A comprehensive review since 2003. *Aggression and Violent Behavior, 27*, 9–29.

Tripathi, V., & Agarwal, S. (2019). Work place bullying faced by elderly post retirement. *International Journal of Home Science, 5*(3), 72–74.

Weng, X., Chui, W., & Liu, L. (2017). Bullying behaviors among Macanese adolescents—Association with psychosocial variables. *International Journal of Environmental Research and Public Health, 14*(8), 887–898.

Yang, E. J., Mahmood, U., Kim, H., Choi, M., Choi, Y., Lee, J. P., Chang, M. J., & Kim, H. S. (2017). Alterations in protein phosphorylation in the amygdala of the 5XFamilial Alzheimer's disease animal model. *Journal of Pharmacological Sciences, 133*(4), 261–267.

Zuckerman, D. (2016). Bullying harms victims and perpetrators of all ages. *Health Progress, 97*(4), 63–66.

Zvěřová, M. (2014). Impact of Alzheimer's disease on family caregiver psychosocial health. Pragues experience. *Activitas Nervosa Superior Rediviva, 56*(1–2), 32–36.

Zvěřová, M. (2019). Clinical aspects of Alzheimer's disease. *Clinical Biochemistry, 72*, 3–6. https://doi.org/10.1016/j.clinbiochem.2019.04.015

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