International Psychogeriatrics: page 1 of 9 © International Psychogeriatric Association 2019
doi:10.1017/S104161021900070X

Stigmatic beliefs towards persons with dementia: comparing Israeli and Greek college students

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ABSTRACT

Objectives: Increasing Alzheimer's Disease (AD) awareness and decreasing stigmatic beliefs among the general public are core goals of National Dementia Strategy programs. College students are one of the most important targeted populations for achieving this goal. The aim of the current study was to examine AD public stigma among Israeli and Greek college students.

Design: A cross-sectional survey was conducted among college students in Israel and Greece using vignette methodology.

Participants: Seven hundred and fifty three college students – 213 Israeli and 540 Greek – participated in the study.

Measurements: Three dimensions of stigma were assessed (cognitive, emotional, and behavioral) together with health beliefs regarding AD and socio-demographic characteristics.

Results: Low levels of stigma were found in both samples, with Israeli students reporting statistically significant higher levels of stigmatic beliefs than Greek students in all the dimensions, except with willingness to help. Similar to stigma in the area of mental illness, the findings in both countries supported an attributional model for AD public stigma, i.e. positive correlations were found among cognitive attributions, negative emotions, and discriminatory behaviors in both countries. Differences between the countries emerged as a significant determinant of cognitive, as well as of negative emotions and willingness to help.

Conclusion: Our findings might help researchers and clinicians to apply the knowledge gained in the area of mental illness to the development of effective ways of reducing AD public stigma. Moreover, they allowed us to frame the understanding of AD public stigma within a socio-cultural context.

Key words: Alzheimer's disease, discrimination, students, cross-national, attribution model

Introduction

Dementia is a syndrome of a progressive or chronic nature that impairs cognitive functioning, including memory, orientation, planning, comprehension, learning, language, and judgment. Alzheimer's disease (AD) is the most common form of dementia (Fiest *et al.*, 2016) and dominates public perception. In an effort to deal with the public health burden of Alzheimer's disease (AD), many countries have developed and adopted National Dementia Strategy programs. While varying in some of their characteristics, increasing AD awareness and decreasing stigmatic beliefs among the general public are core goals in all programs (Chow *et al.*, 2018).

One of the most important populations targeted for attaining these aims are college students (Basri *et al.*, 2017). Several reasons can explain this choice. First, students, and especially those learning in the healthcare disciplines, will become the future professionals providing care to persons with dementia and their family members. Accordingly, a myriad of studies assessed knowledge and attitudes towards AD among nursing students (Eccleston *et al.*, 2015; Kimzey *et al.*, 2016; Mitchell *et al.*, 2017; Scerri and

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Table 1. Participants' background characteristics and AD health beliefs

	Greece ($N = 540$)	Israel ($N = 213$)	t	χ^2
Background characteristics				
Mean (SD) age	21.67 (4.27)	25.52 (4.71)	10.35**	
Gender (% female)	65.7	60.1		ns
Place of residence (% city)	65.7	58.7		ns
Health beliefs				
Familiarity with AD (% yes)	56.8	45.5		7.77**
Mean (SD) AD susceptibility	1.12 (0.99)	2.87 (1.18)	20.57***	
Mean (SD) AD concern	1.30 (1.07)	2.61 (1.22)	14.42***	

ns = not significant.

**p < .05.

***p < .01.

Scerri, 2013; Shin *et al.*, 2015), dental hygiene students (Isobe *et al.*, 2018), and medical and pharmacy students (Gilmartin-Thomas *et al.*, 2018). Second, as the number of persons with AD continues to rise (Prince *et al.*, 2016), increasing numbers of young people will be interacting with these older adults as grandchildren and will most likely become family caregivers of persons with the disease (Celdran *et al.*, 2014). Finally, targeting relatively young people – such as college students – to decrease stigmatic beliefs is especially important because stereotyping processes begin at a young age (Mulvey *et al.*, 2010). However, to the best of our knowledge, no previous study has yet specifically assessed college students' stigmatic beliefs towards persons with AD.

Moreover, while comparative studies in the area of mental illness have demonstrated that stigmatic beliefs are shaped by cultural factors (Abdullah and Brown, 2011), thus far, no cross-cultural studies exploring these effects in relation to AD public stigma have been conducted. This is surprising because several recent studies, based on a culturally based definition of dementia (Hillman and Latimer, 2017), have examined AD caregiver burden (Matsushita *et al.*, 2016), dementia care patterns (Hanssen and Tran, 2018), and even experiences of self-stigma (Lion *et al.*, 2019), cross-culturally. Thus, the aim of the current study was to examine and compare public AD stigma among Israeli and Greek college students.

Israel and Greece are two Mediterranean countries, which share multiple characteristics, but also have some differences as well. They are both welfare states, characterized by universal, or mainly universal, health systems and strong family intergenerational relationships (Gal, 2010). However, based on Hofstede's (1980) paradigm of individualism-collectivism cultural differences, Greece is traditionally regarded as a more collectivistic society than Israel (Hofstede Insights, 2019). In terms of AD, the proportion of persons aged 51 and over reportedly having a diagnosis of dementia was 1.6% in Greece and 4.1% in Israel (Goncalves-Ferreira *et al.*, 2018). Since these percentages are expected to increase in future years, both countries have initiated national strategic programs to improve the care provided to persons with dementia and their caregivers and to increase awareness about the disease (Brodsky *et al.*, 2013). Moreover, while the majority of persons with dementia in both countries are cared for at home, differences exist among the countries regarding the availability of formal services provided to persons with dementia and their caregivers, with Greece having more restricted and less developed social and health services (Lamura *et al.*, 2008; Sakka, 2012).

For the purposes of the study and according to Attribution Theory, we conceptualized *stigma* as a process in which individuals' cognitive attributions, or stereotypes, about the person with a disease are associated with negative and positive emotions, which, in turn, are associated with behavioral discrimination or a willingness to help (Corrigan *et al.*, 2003). Thus, our first hypothesis proposes that college students' stigmatic beliefs towards a person with dementia will follow this attribution process in both countries. Moreover, based on the cross-national differences described earlier and on studies suggesting a positive association between collectivistic cultural orientations and stigmatizing beliefs (Rao *et al.*, 2008), we hypothesized that stigmatic beliefs will differ across countries, with Greek students reporting higher levels of stigma towards a person with dementia.

Methods

Participants

A total of 753 college students (213 Israeli and 540 Greek students) participated in the study. As seen in Table 1, the majority of the students in both samples were female and resided in cities. Israeli students were significantly older than those in the Greek sample.

Table 2. Pearson correlation coefficients of stigma variables among Israeli students ($n = 213$)

	Dangerousness	Lack of Aesthetics	Responsibility	Negative Reactions	Positive Reactions	Segregation	Treatment Coercion	Helping
	1	2	3	4	5	6	7	8
1	1							
2	.53***	1						
3	.56***	.50***	1					
4	.81***	.64***	.64***	1				
5	−.25***	−.13	−.07	−.20***	1			
6	.64***	.37***	.44***	.56***	−.18	1		
7	.34***	.09	.05	.28***	.13	.36***	1	
8	−.32***	−.21***	−.08	−.26***	.76***	−.24***	.14*	1
Cronbach's alpha/r_p	.81	.73	.70	.86	.47***	.66***	.58***	.84
Mean (SD)	2.59 (1.61)	2.30 (1.84)	2.80 (1.53)	2.38 (1.45)	7.30 (1.46)	3.17 (1.46)	5.61 (2.26)	7.52 (1.39)

**p < .01.
***p < .001.

Measures

The following instruments were used:

Dependent variables – Public stigma towards a person with AD

An adapted version of the Attribution Questionnaire 27 (Corrigan *et al.*, 2003) was used. The adaptation entailed replacing mental illness with AD and including two items assessing lack of aesthetics. All items were rated on a 9-point Likert-type scale, ranging from 1= not at all to 9= very much, and tapping three dimensions of stigma – cognitive attributions, emotional reactions, and discriminatory behavior. The Adapted Questionnaire was originally developed in Hebrew and was translated into to Greek. Principal components factor analyses with oblique rotation and eigenvalue greater than 1 were used. Since Attribution Theory states that public stigma is composed of cognitive attributions, emotional reactions, and discriminatory behavior, three analyses were performed, each within a dimension of the theory. The analyses revealed three factors in the cognitive dimension (dangerousness, responsibility, and lack of aesthetics), two factors in the emotional dimension (negative and positive emotional reactions), and three factors in the behavioral dimension (segregation, treatment coercion, and helping behavior). All factors showed modest to excellent internal reliability in both countries (Table 2). Following these analyses, indices were composed of the mean of the items (ranging 1–9).

Independent variables

Independent variables included socio-demographic characteristics as well as health beliefs regarding AD.

Socio-demographic characteristics included age, gender (male or female), place of residence (city or village), and area of study (health or other).

Health beliefs regarding AD were similar to previous studies (Werner *et al.*, 2013) and included, familiarity with the disease, perceived susceptibility, and concern about developing the disease.

- *Familiarity* was assessed by asking participants if they knew someone with Alzheimer's disease among their relatives or acquaintances.
- *Perceived susceptibility* was assessed with a single question: "How likely do you think it is that you will develop Alzheimer's disease?" Answers were rated on a 5-point Likert-type scale, ranging from 1 = not at all likely to 5 = very likely.
- *Concern about developing Alzheimer's disease* was assessed by a single question: "How much do you worry that you will develop Alzheimer's disease?" Answers were rated on a 5-point Likert-type scale, ranging from 1 = not at all worried to 5 = very worried.

Procedure

Participants were recruited opportunistically from various colleges in the northern part of Israel and from one college in Crete. Similar to previous studies (Werner, 2008), after signing informed consent forms, participants were presented with a vignette describing a female 80-year-old person with AD and were then asked to answer a structured questionnaire. While Israeli participants answered a computerized version of the questionnaire, Greek participants were interviewed face-to-face.

Statistical analyses

Descriptive statistics (percentages, means, and standard deviations) were used to describe the sample

Table 3. Pearson correlation coefficients of stigma variables among Greek students (n = 540)

	Dangerousness	Lack of Aesthetics	Responsibility	Negative Reactions	Positive Reactions	Segregation	Treatment Coercion	Helping
	1	2	3	4	5	6	7	8
1	1							
2	.43***	1						
3	.31***	.18***	1					
4	.74***	.52***	.39***	1				
5	−.23***	−.16***	−.17***	−.34***	1			
6	.43***	.26***	.23***	.36***	−.14***	1		
7	.04	.06	.08	.21***	.27***	.19***	1	
8	−.31***	−.31***	−.12**	−.40***	.58***	−.19***	.22***	1
Cronbach's alpha/r_p	.79	.68***	.41	.86	.30***	.61***	.39***	.82
Mean (SD)	2.24 (1.31)	2.27 (1.69)	2.56 (1.11)	1.65 (.98)	6.46 (1.76)	3.09 (1.95)	6.78 (1.95)	6.55 (1.82)

**p < .01.
***p < .001.

and the main variables. Pearson correlations were used to assess the relationships between the different stigmatic attributions in Israel and Greece. Finally, in order to examine the effect of the country variable (Israel/Greece) on stigmatic beliefs, multiple hierarchical regressions were calculated. We also assessed the contribution of familiarity, susceptibility, and concern to stigmatic beliefs, beyond major background variables. Further, in each model, the three interactions of familiarity, susceptibility, and concern with country were added. All continuous variables were standardized in order to test the interactions with the country variable. We tested for multicollinearity, and the results indicated that it was not a concern in our model. None of the variance inflation factors (VIFs) exceeded 2.3. In the first step of the regression, we included sociodemographic factors. In the second step, we included health beliefs about Alzheimer's disease. In the third step, we included the effect of country (Israel/ Greece). In the fourth step, we investigated the moderating effect of the country variable with health beliefs. Significant interactions were interpreted with simple slopes (Aiken and West 1991; Dawson, 2014). As there were eight dependent variables and eight predictors in each model (not counting the interactions), the type I error was high. Thus, the Bonferroni correction for multiple comparisons was used in regard to the main effects of each model (p = 0.05/8 = 0.006). As the interaction effects were the main interest of these analyses, the Bonferroni correction was not applied to them. Finally, we conducted independent t-tests to examine differences between the two countries regarding the stigmatic beliefs found to be statistically significant in the regression analysis.

Ethical considerations

The study's protocol was approved by the Ethics Committee of the University of Haifa and by the Research Ethics Committee of the Technological Educational Institute of Crete.

Results

Correlations between cognitive, emotional, and behavioral stigmatic attributions in Israel and Greece

Tables 2 and 3 show correlation coefficients between stigmatic attributions in Israel and Greece, respectively. As can be observed, associations between the different attributions were in the anticipated direction: positive correlations were found among cognitive attributions, negative emotions, and discriminatory behaviors in both countries. Moreover, negative correlations were found between cognitive attributions and positive emotions (with the exception of a lack of aesthetics in the Israeli sample), as well as between cognitive attributions and willingness to help.

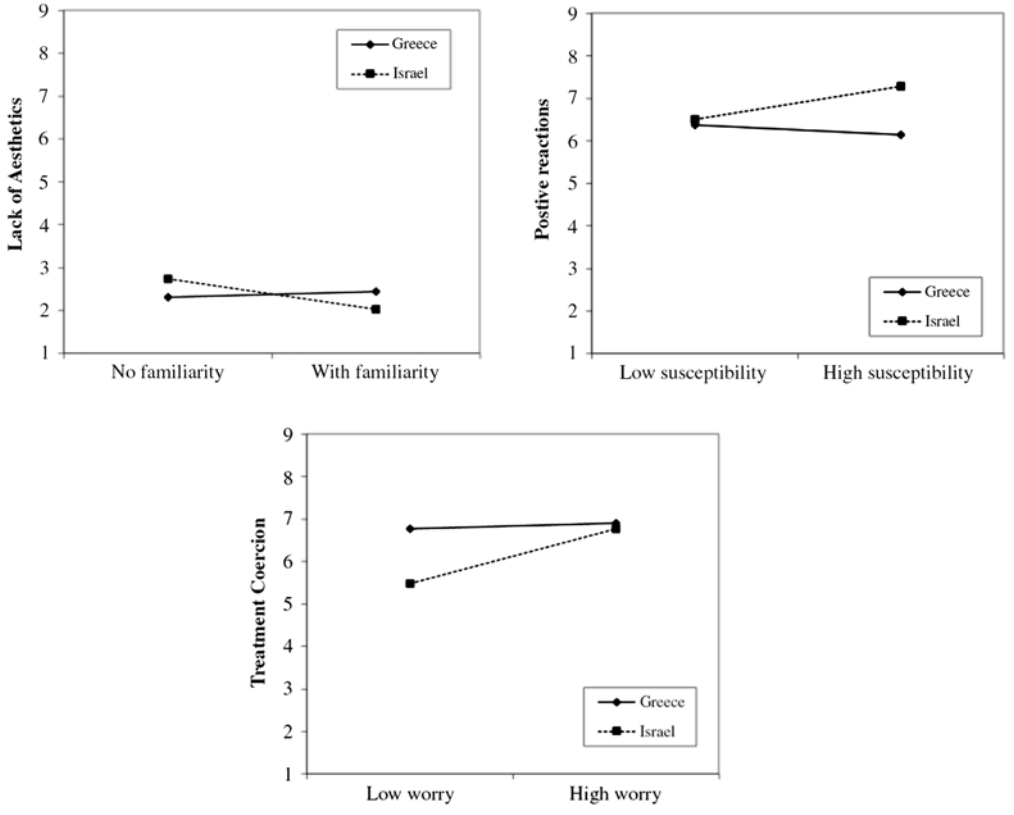
The effect of country on college students' stigmatic attributions about dementia

As can be observed in Table 4, *country* emerged as a significant determinant of cognitive attributions of AD, as well as of negative emotions and willingness to help. Regarding the statistically significant interaction terms, as shown in Figures 1–3, we found a marginally negative relationship between familiarity and lack of aesthetics in Israel (B = −0.70, t = −1.89, p = .059) and no significant result in

Table 4. Hierarchical regressions assessing the effect of country[1] (n = 753)

	Dangerousness	Lack of Aesthetics	Responsibility	Negative Reactions	Positive Reactions	Segregation	Treatment Coercion	Helping
Step 1								
Gender	.11	.15***	.06	.12**	−.13**	.19***	−.05	−.08
Age	−.10	.04	−.05	−.08	.15***	−.07	.01	.06
Place of residence	−.05	−.04	−.05	−.03	.03	−.01	−.02	.04
Area of study	−.12	−.10	−.06	−.12**	.11	−.07	−.04	.25***
R^2	.05	.04	.01	.07	.08	.05	.01	.08
Step 2								
Familiarity	−.03	.04	−.01	−.07	.13**	.01	.05	.07
Susceptibility	−.01	−.02	.05	.01	−.07	.03	−.06	.08
Concern	.09	.06	−.06	.04	.17**	−.04	.03	−.01
R^2	.07	.04	.02	.12	.12	.06	.01	.12
Step 3								
Country	.16**	.09	.15	.34***	.16**	.03	−.11	.20***
R^2	.08	.04	.02	.17	.14	.06	.01	.15
Step 4								
Country*familiarity	−.04	−.11*	−.08	−.09	−.02	.05	−.09	−.01
Country*susceptibility	.03	−.03	.01	−.04	.16*	.12	.12	.03
Country*concern	−.01	.03	.02	.09	−.11	−.03	.15*	.06
R^2	.08***	.04***	.02*	.18***	.15***	.06***	.04***	.15***

[1] Values in the table are β values.
*p<.05.
**p<.01.
***p<.001.



Figures 1–3. Significant interaction effects of AD health beliefs X country on stigmatic attributions.

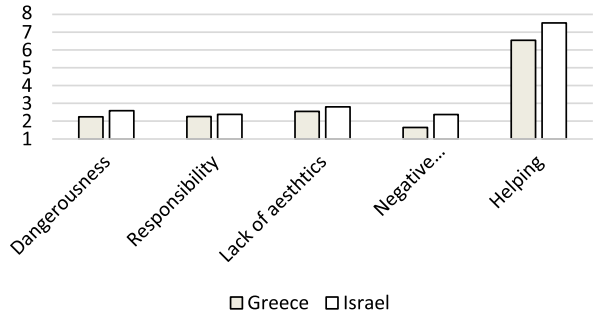


Figure 4. Mean stigmatic attributions in Greece and Israel.

Greece (B = 0.13, t = 0.87, p = .384). We found a positive relationship between susceptibility and positive reactions in Israel (B = 0.42, t = 1.96, p = .050) and no significant result in Greece (B = −0.13, t = −1.10, p = .274). Regarding treatment coercion, we found a positive relationship between concern and treatment coercion in Israel (B = 0.68, t = 2.58, p = .010) and no significant result in Greece (B = 0.07, t = 0.59, p = .552). Finally, with the exception of willingness to help, very low levels of stigmatic beliefs were found in both samples, with Israeli students reporting statistically significant higher beliefs than Greek students in all the dimensions (Figure 4).

Discussion and Implications

To the best of our knowledge, this is the first cross-national study assessing public stigma towards persons with dementia among college students. Our results contribute to expanding the existing knowledge regarding the conceptual definition of stigma in the area of AD as being composed of cognitive, emotional, and behavioral dimensions, as well as on its characteristics across different cultures.

The attributional characteristics of public stigma in the area of AD

Similar to stigma in the area of mental illness (Corrigan *et al.*, 2003), the associations between stigmatic attributions corroborated the assumptions of an attributional model of stigma in both countries. Stereotypes of dangerousness, responsibility, and lack of aesthetics were positively associated with negative emotions and negatively associated with positive emotions. Negative emotions were positively associated with segregation and treatment coercion and negatively associated with helping behavior. Finally, while as expected, positive emotions were negatively associated with segregation, they were also positively associated with treatment coercion. While surprising at first, this finding – which was consistent in both countries and corroborated the results of a previous Israeli study (Werner, 2008) – might reflect laypersons' misconceptions regarding treatment of AD. Indeed, a recent systematic review of 25 published articles assessing dementia illness representations found that studies conducted with laypersons demonstrated that dementia was perceived as being dependent on treatment effectiveness (Shinan-Altman and Werner, 2019). Future studies should examine these opinions in more detail and depth in order to decrease mistaken beliefs and reduce stigmatic attributions.

Differences in stigmatic attributions about dementia across countries

Several interesting findings emerged from our study. First, significant cross-national differences were found – above and beyond the effect of background variables and dementia beliefs – in five of the stigmatic attributions examined: dangerousness, responsibility, negative and positive emotional reactions, and helping behaviors. Second, we found a differential impact of country on lack of aesthetics, positive reactions, and treatment coercion based on AD beliefs, with Israeli students being more influenced by their beliefs than Greek students. A recent cross-national study examining the relationship between causal beliefs and stigmatizing attitudes toward schizophrenia also found a stronger association between the variables among Israeli college students compared to Italian college students (Mannarini *et al.*, 2018). This difference was attributed to Israeli students' stronger adherence to a bio-genetic model as an explanation for the disease. Future studies should further explore this line of research to better understand whether a similar explanation is applicable to the cultural differences found in the present study.

Finally, in contradiction to our hypothesis, stigmatic beliefs were higher among Israeli students than among Greek students. Several conceptual and methodological explanations might be provided for this finding.

First, while both countries traditionally differed in their individualistic-collectivistic tendencies, it should be noted that these are not either/or characteristics. Indeed, it is stated that cultures are characterized by a heterogeneity of beliefs and values, and it is suggested that this dichotomous construct should be replaced by a more elaborate characterization of horizontal and vertical varieties of collectivism-individualism (Triandis and Gelfand, 1998). Thus, Israel and Greece might not be such different cultures as assumed; especially since, due to modernization and globalization processes, the Greek society is currently undergoing a shift towards individualism (Papastylianou and Lampridis, 2016; Pouliasi and Verkuyten, 2011). Regrettably, in the present

study, we were unable to corroborate this explanation as we did not empirically assess the participants' collectivistic-individualistic value orientations. Including these measures in future cross-national studies would provide further explanations of the cultural factors that affect stigma.

Second, the lower rates of familiarity, together with the increased levels of susceptibility and concern of developing AD reported in the Israeli sample, might have overridden the effects of the individualistic-collectivistic characteristics of the cultures. A similar explanation served to elucidate the lack of association found between the individualism-collectivism paradigm and stigmatic beliefs in the area of mental illness (Hampton and Xiao, 2007; Papadopoulos *et al.*, 2013).

Finally, as commonly stated in cross-national surveys, the differences observed between the countries might be the result of cultural differences in social desirability biases (Kemmelmeier, 2016). This explanation is supported by the findings of a cross-cultural study of caregiver burden comparing English, Finnish, and Greek informal caregivers and showing that Greek caregivers were more reluctant than others to report that they experienced burden (Konerding *et al.*, 2018). Moreover, the different methodologies used – i.e. computerized questionnaires in Israel and face-to-face interviews in Greece – might have further increased biases among Greek students.

Several study limitations should be acknowledged. First, the samples in both countries were not drawn at random, therefore making it hard to generalize the current findings to the general populations. Second, since a cross-sectional design was used, findings are limited to interpretations of associations, rather than causality. Third, due to the number of comparisons conducted, type I error was elevated, which was partly corrected by implementing the Bonferroni correction. Still, the high type I error remains a limitation. Fourth, the study's importance might be improved if other variables associated with dementia stigma, such as knowledge about AD (Cahill *et al.*, 2015), were included. This is important, especially since studies conducted in Israel among laypersons showed fair levels of knowledge about AD (Werner, 2008; Werner *et al.*, 2013), while in Greece a similar study reported poor levels of knowledge (Tsolaki *et al.*, 2009). Finally, the use of qualitative methods could have helped deepen our understanding of the students' causal beliefs, beyond the difference in stigmatic attributions about dementia between the two countries.

Despite these limitations, our research contributes to the conceptualization of stigma and to the emerging study of a cross-cultural understanding of AD public stigma. First, our findings in both countries supported an attribution model for public stigma, including – similarly to stigma in the area of mental illness – cognitive, emotional, and behavioral attributions. Given the mostly descriptive state of the literature in the area of public stigma and AD until today (Herrmann *et al.*, 2018; Nguyen and Li, 2018; Werner, 2014), this is an important finding, as it might help guide the development of future research. Most importantly, it might allow researchers and clinicians to apply the knowledge gained in the area of mental illness to the development of effective ways of reducing public stigma in the area of AD, in general, and among young populations, in particular. Second, our comparative study allowed us to frame the understanding of AD public stigma within a wider socio-cultural context. Although challenged by conceptual, methodological, and logistical complexities, expanding cross-cultural studies in the area of stigma and AD is an important aim, if we want to promote experiences and data exchange between countries, as has been stated by several European dementia initiatives (Alzheimer's Europe, 2018).

Conflict of interest

None.

Description of authors' roles

Perla Werner designed the study, supervised data collection in Israel, interpreted results, and drafted a version of the paper. Argyroula Kalaitzaki contributed to the design of the study, supervised data collection in Greece, and contributed to the interpretation of the results. Naama Spitzer contributed to data analysis. Lilach Raviv-Turgeman collected the data in Israel, and Sofia Koukouli collected the data in Greece. Chariklia Tziraki, together with all the authors, contributed to the interpretation of the results. All the authors approved the final version for submission.

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