

# Self-efficacy and conscientiousness in caregivers of the mentally challenged: a randomized controlled trial

## Abstract

Little research has evaluated the obstacles and challenges that complicate the daily life of mentally challenged individuals and their caregivers. The involvement in the provision of care for the mentally challenged constitutes a lifetime commitment for their family members that form the main core of care, compelling them both to experience most of the health-care inequalities in comparison with the rest of the general population. Self-efficacy and conscientiousness consist two behavioral signatures/personality traits that guarantee the uncompromising enthusiasm and undivided commitment in circumstances that are defined as specifically difficult and demanding, enabling caregivers to adopt in the given conditions. The results of the survey indicate that the involvement in the provision of care for the mentally challenged ( $N=81$ ) is not random and doesn't depend on the score of the Intelligence Scale, but is in fact the result of a conscious selection, a mental commitment, whose success is ensured by the perception of self-efficacy and conscientiousness, that are statistically significant and at the same time bidirectional. Furthermore, the survey also indicates that caregivers who chose willingly to take care of the mentally challenged, have a statistically significant higher self-efficacy perception.

**Keywords:** mental challenge, mentally challenged individuals, caregivers, self-efficacy, conscientiousness

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## Introduction

Mental challenge is a chronic condition that restricts the person's adaptive behavior, disabling individuals to meet their needs without the presence of a caregiver. Today, family caregivers play a very important role in the health care system as most of the medical care is being provided at home, experiencing positive and negative outcomes in their physical and mental health. The aftereffects of caregiving are often described as a burden or as a procedure that may enable caregivers to develop or overhaul their personality traits. Self-efficacy and conscientiousness consist two different personality traits that originate from two different theories<sup>1</sup> but still form two sides of the same coin: individuals that feature a high sense of self-efficacy are being described as adaptable, vigorous, enthusiastic and risky whereas individuals that feature a high sense of conscientiousness are being described as organized, reliable, methodic and patient, reflecting the ideal caregiver who will cope with the daily care of the mentally challenged successfully and often exclusively. Surveys that focus on the personality traits of the caregivers<sup>2</sup> claim that self-efficacy and conscientiousness consist the main core of the caregiver's personality but can also be cultivated through psychoeducation programs.

However, limited research has been published on the self-efficacy and conscientiousness of the caregivers of mentally disabled patients. Additionally, another parameter that has not been taken into consideration so far is the voluntarily or involuntarily decision to take care of the patient and whether this decision affects the self-efficacy and conscientiousness levels.

## Definition of mental disability

Mental disability is a complex pathological situation in which genetic abnormalities, behavioral and adaptive disorders and learning difficulties can co-exist. According to ICD-10 Guide for Mental Retardation<sup>3</sup> mental disability is a condition of arrested or incomplete

mind-development, which can be characterized by impairment of skills during the developmental period, in cognitive, linguistic, motor and social abilities, which can occur with or without mental or psychical disorder. Individuals with mental disability are at greater risk of exploitation and physical/sexual abuse but can adopt to the daily demands of a protected social environment (subjects with mild mental disability). The coding for degrees of mental retardation according to ICD-10 Guide for Mental Retardation<sup>3</sup> are presented in Table 1.

**Table 1** Coding for degrees of mental disability according to ICD-10

Code	Degree of mental disability
F70	Mild Mental Disability
F71	Moderate Mental Disability
F72	Severe Mental Disability
F73	Profound Mental Disability
F78	Other Mental Disability
F79	Unspecified Mental Disability

The assessment of the intellectual level is established through Intelligence Scales (Verbal and Performance IQ) with several psychometric test performances, which provide the IQ level such as Weschler Intelligence Scale and Raven Progressive Matrices. The diagnostic guidelines according to ICD-10 are the following:

F70: Mild Mental Disability (IQ level 55-69): Individuals with mild mental disability can achieve full independence in self-care. They can develop their skills through education but may need help in case of social or other pressure. If they create their own family, they may need support.

F71: Moderate Mental Disability (IQ level 45-54): Individuals with moderate mental disability can work as unskilled or semiskilled manual laborers. Their communication and speech skills are limited. They can go to familiar places and do some errands with help. They may have behavioral or psychological disorders.

F72: Severe Mental Disability (IQ level 25-39): Individuals with severe mental disability suffer from motor impairment or maldevelopment of the central nervous system and depend on others or live in institutions. They may have behavioral or psychological disorders.

F73: Profound Mental Disability (IQ level <25): These individuals have little motor or perceptive abilities. They need constant help and supervision. The majority lives in institutions.<sup>3</sup>

Unfortunately, there is no cure for people with mental disabilities who have a low life expectancy, higher levels of comorbidity and other disorders that often cannot be diagnosed complicating the health care cost and their life quality.<sup>4</sup>

### Definition of caregiving

The concept of caregiving is multidimensional and has many definitions: philosophical, scientific, religious. In 2000 the Institute of Medicine (IOM) in USA formulated the definition of anthropocentric care as the medical care which ensures that the healing procedures meet with the needs and choices of the patients, with the collaboration between doctors, patients and their families.<sup>5</sup> There are two kinds of caregivers:<sup>6</sup>

- a. The formal caregiver: He/ She can be a nurse, or a social worker and provide professional help for money.
- b. The informal caregiver: informal caregivers can be relatives or friends, who willingly take care of their loved ones.

Those who eventually take care of the mentally challenged are parents, siblings, spouses and children, other relatives, friends and/or professional caregivers. According to, 50% of the caregivers will suffer from depression, a small percentage of them will heal but the symptoms will remain even if the mentally challenged individuals will be institutionalized or die. They also suffer from cardiovascular events, insomnia and fatigue. However, the presence of a mentally challenged individual can strengthen caregivers' self-esteem and family bonds.<sup>7</sup> That is why caregivers should be supported by health-care services (advisory and support groups), so that they maintain their dignity and their mental hypostasis intact.

### Self-efficacy and conscientiousness

The theory of self-efficacy was formulated by Alfred Bandura and is associated with the individual's perception regarding its ability to organize, act and carry out a task satisfactorily.<sup>8</sup> The sense of self-efficacy reflects in a person's way of thinking, feeling, acting, their motivations, the amount of effort they make, their performance, emotional vigilance, and their persistence when they meet obstacles.<sup>9</sup> It refers to a person's subjective perception that he/she will succeed in something.

Individuals that have self-efficacy are being described as adaptable, dynamic, willing, tender, patient, ambitious, enthusiastic, dedicated, cooperative, friendly, receptive to new ideas, with high self-esteem, positive feedback and perseverance and mentally resistant to stress and depression, with academic accomplishments/innovations and athletic. On the other hand, individuals with low

self-efficacy are being described as isolated, pessimist, with low self-esteem and adaptability, critical to themselves and the others, who don't exert themselves and experience in stress and the feeling of failure and bad luck. Individuals with high self-efficacy select tasks that are challenging and even if they meet obstacles, difficulties, or uncertainties, they bounce back rapidly and continue with a high sense of commitment. According to Chen et al.<sup>10</sup>, high sense of self-efficacy interrelates with conscientiousness, creativity, self-esteem, and the need to succeed. Self-effective individuals focus on higher goals with the intention to fulfill their duties, remaining untrammelled.

The sense of self-efficacy constitutes a criterion of performance and a factor of prediction in circumstances that are described as difficult, interesting and demanding, empowering the individual to activate mechanisms so as to respond successfully in goals/tasks to which they have committed and control the environment and the events that affect their lives. Conscientiousness is the last link of the Five Factor Personality Model.<sup>1</sup> In 1992 Paul Costa and Robert McCrae created the Five Factor Personality Inventory,<sup>11</sup> which is used to diagnose personality disorders (Table 2).

**Table 2** Scale of conscientiousness I I

High score of conscientiousness	Low score of conscientiousness
Organized	Unorganized
Reliable	Unreliable
Decisive	Undecisive
Hard-Working	Lazy
Precise	Indifferent
Methodic	Careless
Ambitious	Weak-willed
Patient	Hedonist

The aspect of conscientiousness refers to a person's ability to accomplish goals, through perseverance and orderliness. Individuals with a high sense of conscientiousness are being described as organized, disciplined, concentrated, hard-working, careful, and accurate. They are dignified and work hard to successfully complete their task, guided by mature thought.<sup>11</sup> Individuals with a high score in conscientiousness are patient and committed comparatively to those with lower score. According to Judge et al.<sup>12</sup> they have a high score in the self-efficacy scale since they are highly motivated and effective in their job objectives. Conscientiousness reflects the perfect employee, who is responsible, dignified, a team worker who tries harder in case the team goals fail, altruistic, initiative, supporting to their team. The conscientious employee is never creative or innovative (Moynihan & Peterson, 2001), but will pursue team success without promoting its personal development and glamour, in order to fulfil the team's goal, encouraging others and diminishing the conflicts. On the contrary, less conscientious individuals are dilatory, make less effort and do not stand for the decisions or the actions of others. Conscientiousness is undoubtedly a leader's characteristic, in the sense that individuals who possess it are trustworthy, accurate, methodic and carry out tasks, considering the needs and feelings of the others, which they manage to coordinate.<sup>13</sup>

Caregivers with a high score in self efficacy are mentally and physically healthy and have also a high sense of conscientiousness.<sup>14</sup> On the other hand, caregivers with a high sense of conscientiousness

adopt coping strategies, build stronger relationship with the beneficiaries, have less stress and less chronic diseases.<sup>15</sup> Self-efficacy and conscientiousness constitute a personality resistant in time and circumstances and guarantee constant self-improvement and control in everyday challenges.

## Research method

### Hypotheses

In the present study, the correlation between the self-efficacy and conscientiousness scores of mentally impaired caregivers was investigated. The research hypotheses derived from the scope of the present study and from the literature review:

1. The self-efficacy and conscientiousness perception of the caregivers is high and independent from the IQ score of the care receivers.
2. Self-efficacy varies depending on the whether the decision to take care of the patient is voluntarily or involuntarily.
3. A positive correlation between self-efficacy and conscientiousness is identified.

### Sample selection

In total 81 caregivers and their beneficiaries (individuals with mental disability) participated in the survey that took place in Saint Andrews General Hospital in Patras, Greece during January until April of 2019. The participants reached the Psychiatric Wing of the hospital seeking medical consultation. The study took place in the framework of the author's master's degree, it received ethical approval from Saint Andrews Hospital and the Greek Ministry of Health, and the participants were informed and confirmed their consent priori.

Participants completed the General Efficacy Scale<sup>16</sup> and the Five Factor Personality Inventory (specifically the questions regarding conscientiousness).<sup>11</sup> Scores for each item (17 in total) ranged from

1 (*strongly disagree*) to 5 (*strongly agree*). They also completed a questionnaire with demographic parameters and questions regarding the conditions of caregiving. All individuals with mental disability underwent Weschler's Intelligence Scale for Adults.<sup>17</sup>

### Statistical analysis

In order to assist the evaluation of the experimental results, a statistical analysis was performed to determine whether a significant difference between the mean values is present. The main statistical approach that prescribes the calculation of the average and standard deviation of the experimental values was performed. Histograms were used to plot the average experimental values and standard deviation error bars.

The Kruscal-Wallis one-way analysis of variance statistical process was used for the comparison of the mean values between groups<sup>18</sup> followed by t-test for pairwise means comparison. Specifically, the data collected were registered in SPSS 18™ and where analyzed using Kruscal-Wallis one-way analysis of variance, r-Pearson correlation coefficient<sup>19</sup> and Cronbach's Alpha analysis.<sup>20</sup> A p-value of a magnitude <0.05 was taken as the probability of rejecting the null hypothesis (95% level of certainty).

## Results

The conditions of caregiving as concluded by the evaluation of the surveys are shown in Table 3. As anticipated, most of the caregivers were female (75.3%, N=61) but there is also a significant percentage of men who chose to take care of individuals with mental disabilities (24.7%, N=20). According the conditions of caregiving, 51% of the caregivers have a relative relationship with the caretaker (parent or siblings) and 34.6% are professional caregivers. Nearly all caregivers chose willingly to take care of the beneficiaries (97.5%), whereas only 2 (2.5%) carried out the task involuntarily (Figure 1). The patients were diagnosed with Mild Mental Disability (21%), 30.9% with Moderate Mental Disability, 24.7% with Severe Mental Disability and 23.5% with Profound Mental Disability (Figure 2).

**Table 3** Conditions of caregiving

		Frequency	Percentage
		(N)	(%)
Relationship with the caretaker	Parent	25	30.9
	Sibling	17	21
	Professional Caregiver	28	34.6
Decision to take care of the patient	Willingly	79	97.5
	Unwillingly	2	2.5
PATIENTS' DIAGNOSE	Mild Mental Disability	17	21
	Moderate Mental Disability	25	30.9
	Severe Mental Disability	20	24.7
	Profound Mental Disability	19	23.5

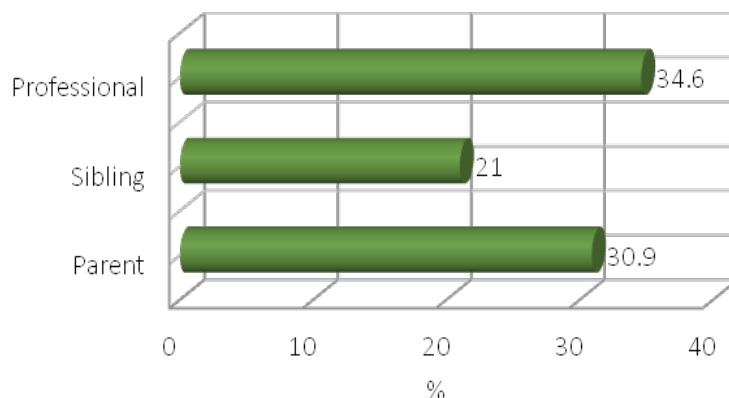


Figure 1 Caregiver's relationship with the patient.

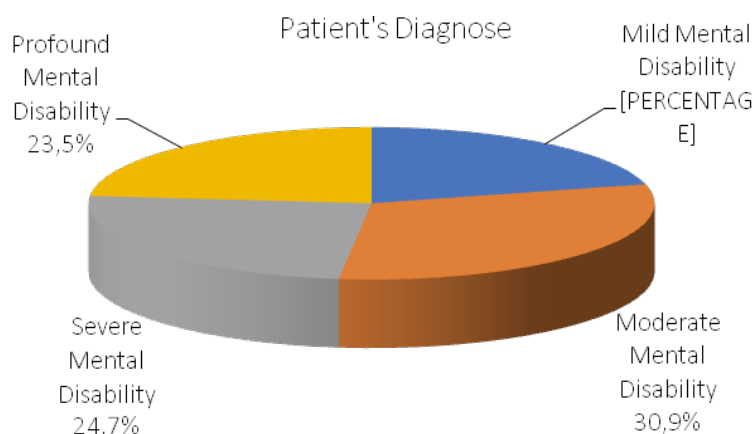


Figure 2 Patients Diagnose.

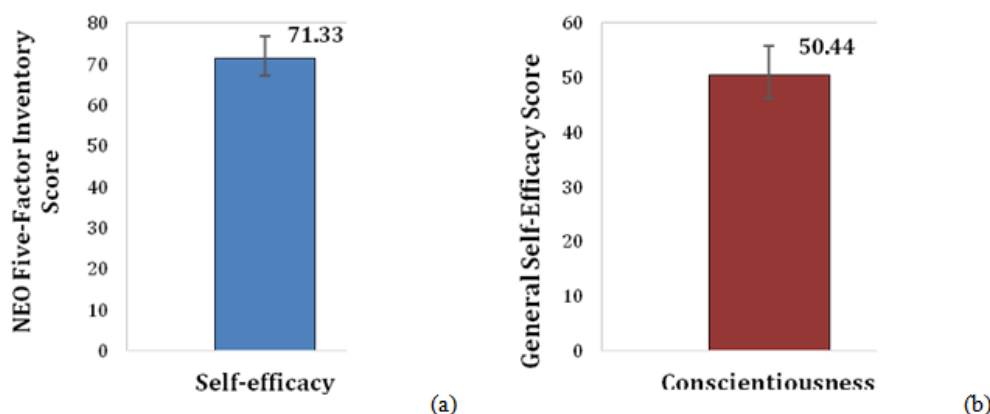
**Self-efficacy**

As hypothesized, caregivers who participated in the survey presented a high General Self-Efficacy score (average level: 71.33 ± 5.38), meaning that they are confident in carrying out the task (Figure 3(a)). The Cronbach's Alpha reliability coefficient was 0.733.

Moreover, consistent with our prediction and the literature review, the interaction between taking care of the beneficiaries willingly and self-efficacy is significant. Participants who are taking care of the patients willingly are more self-effective than those who are taking care of them unwillingly (p=0.027) (Table 4).

Table 4 Level of self-efficacy per conditions of caregiving

		Self- Efficacy	Test	p-value
Relationship with the caretaker	Parent	70.08 ± 3.851	Kruskal-Wallis	0.242
	Sibling	71.65 ± 6.566		
	Professional Caregiver	71.71 ± 6.200		
Decision to take care of the patient	Willingly	71.67 ± 4.875	Mann-Whitney	0.027
	Unwillingly	58.00 ± 9.899		
Patients' diagnose	Mild Mental Disability	70.88 ± 4.060	Kruskal-Wallis	0.151
	Moderate Mental Disability	70.96 ± 4.765		
	Severe Mental Disability	69.90 ± 7.573		
	Profound Mental Disability	73.74 ± 3.798		



**Figure 3** Caregivers’ level of (a) self-efficacy and (b) conscientiousness.

**Conscientiousness**

The NEO Five-Factor Inventory conscientiousness score is shown in Figure 3(b). As hypothesized, caregivers who participated in the survey have a high score in conscientiousness, meaning that they are

self-disciplined and consistent (average value: 50.44 ± 4.319). The Cronbach’s Alpha reliability coefficient was 0.697. Regardless of the conditions of caregiving (relationship, patients diagnose), all the caregivers have a high score in conscientiousness (Table 5).

**Table 5** Level of conscientiousness per conditions of caregiving

	Conscientiousness	Test	p-value
Relationship with the caretaker	Parent	Kruskal-Wallis	0.404
	Sibling		
	Professional		
Decision to take care of the patient	Willingly	Mann-Whitney	0.454
	Unwillingly		
Patients’ diagnose	Mild	Kruskal-Wallis	0.61
	Moderate		
	Mental Disability		
	Severe		
	Profound		

**Association between self-efficacy and conscientiousness**

The probable association between the two variables was examined with Pearson’s Correlation Coefficient. The R-Pearson coefficient ranges from -1 (perfect negative correlation) to +1 (perfect positive correlation). As shown in Table 6, the parameters present a moderate correlation (R=0.501). This finding led us to use a Simple Linear Regression to ascertain if conscientiousness depends on self-efficacy. Since the coefficient b is positive, this indicates that an increased the self-efficacy score results in increased conscientiousness, and vice versa (Table 7). Taken together, the interaction between self-efficacy and conscientiousness is bidirectional. In fact, self-efficacy interprets 25.1% in conscientiousness’ variability. Supplementally,

we examined if self-efficacy depends on conscientiousness, certifying that conscientiousness also interprets 25.1% in self-efficacy’s variability (Table 8).

**Table 6** Correlation between self-efficacy and conscientiousness

	Conscientiousness
	<b>RI</b>
Self-efficacy	0.501**

<sup>1</sup>Pearson’s Correlation Coefficient

\*\* The correlation is statistically important (a=0,01)



**Table 7** Interaction between conscientiousness and self-efficacy (use of Pearson's Correlation Coefficient)

Dependent variable	Parameter of simple linear regression	Independent variable (self-efficacy)
	Coefficient b	0.402
Conscientiousness	p-value	0.000**
	R2	0.251

**Table 8** Interaction between self-efficacy and conscientiousness (use of Pearson's Correlation Coefficient)

Dependent variable	Parameter of simple linear regression	Independent variable (conscientiousness)
	Coefficient b	0.625
Self-efficacy	p-value	0.000**
	R2	0.251

\*\* The interaction is statistically significant ( $p = 0.01$ )

## Discussion

The purpose of this research was to study self-efficacy and conscientiousness in caregivers of the mentally challenged and the interaction between the two variables. We also aimed to examine the relationship between the willing and unwilling decision to take care of the patients and the two variables.

As predicted, most of the caregivers are female. This intersex differentiation can be attributed to the social role and the cultural norms that bind women. According to Miller et al.<sup>21</sup> women develop stronger family bonds, caregiving, and responsibility behaviors, which are cultivated through infancy and interculturally contrary to men who are encouraged to be independent. Women caretakers also spend more time with the beneficiaries performing multi-tasks contrary to men.

Most of the caregivers have a family bond with the caretakers (65.5%), parental or sibling. Taking care of a person with a mental disability is a constant challenge for the family, since it can last up to 60 years, turning family caregivers to lifelong professional caregivers. Parents, especially mothers, are often referred as "captive".<sup>22</sup> This captivity could be inherited to the healthy descendants, after parents grow older or die.

As hypothesized, caregivers have a high score in self-efficacy (average score: 71.33), consistent with Stanley et al.<sup>23</sup> research who claim that high self-efficacy facilitates caregivers to confront difficulties, be persistent and never doubt their ability to take care of the beneficiaries, using this perception as a shield in depression, coping with difficulties that may emerge in medical care or finance. These findings correspond with Aneshensel et al.<sup>24</sup> findings, according to which the perception of self-efficacy reduces the caregiver's perception of "captivity" and enhances its optimism and belief in its abilities to cope with, fighting depression back. The sense of captivity can be translated into unwilling caregiving. Indeed, participants who took care of the beneficiaries willingly have a statistically significant higher self-efficacy regarding those who took care of the beneficiaries unwillingly ( $p = 0.027$ ).

According to the second personality trait that was tested, conscientiousness, the results showed that caregivers who participated in the study had also a high score (average score: 50.44). This perception remains consistent regardless the relationship with the caretaker or the diagnose. The perception of conscientiousness in caregiving is consistent with the research of John et al.<sup>25</sup>, which supports that high sense of conscientiousness facilitates caregivers

to be obedient, to commit, compromise and not deviate from the main plan, regardless obstacles or limitations, since they do not want to disappoint others. Research by Ito et al.<sup>26</sup> claim that individuals with a high sense of conscientiousness seek for help and guidance, facilitating communication and feedback with others. Finally, it is indicated that the two variables are bidirectional, complying with the research by Chen et al.<sup>27</sup> and Lee et al.<sup>24</sup>, who state that the perception of self-efficacy relates with conscientiousness. In fact, it was found that self-efficacy interprets 25.1% in conscientiousness' variability and respectively conscientiousness interprets 25.1% in self-efficacy's variability, consistent with Judge et al.<sup>12</sup> research, in which individuals with a high sense of conscientiousness have also a high score in self-efficacy since they are highly motivated and hard-working.

## Conclusions

In the question "Who will become a caregiver?", the answer is those individuals who will convert obstacles into challenges and danger into personal growth, driven by their will to cope with successfully. Taking care of individuals with mental disabilities is not a random fact and does not demand special skills. Caregivers are not victims of a situation or supermen/superwomen. They are physically and mentally available. The fact that they possess a high sense of self-efficacy and conscientiousness ensures their benefiter's well-being. These two personality traits will guide their choices for the Severe and Profound mental disabled, whereas they will make sure that individuals with Mild and Moderate mental disability will acquire skills through emotional and social reinforcement programs that will allow them to live by their own terms.

References regarding the personality traits of the caregivers' of mentally challenged individuals is very limited. New studies should be made due to social changes and awareness. In conclusion, the results of the survey indicate that the involvement in the provision of care for the mentally challenged ( $N = 81$ ) is not random and doesn't depend on the score of the Intelligence Scale, but is in fact the result of a conscious selection, a mental commitment, whose success is ensured by the perception of self-efficacy and conscientiousness, that are statistically significant and at the same time bidirectional. Self-efficacy and conscientiousness ensure that this effort will succeed, regardless of the obstacles and will benefit both caregivers and caretakers who will become better, since taking care of and being taken care of is a journey of self-realization. This study could lead to further conclusions, in case the perceptions of self-efficacy and conscientiousness would be examined in transitional circumstances, for example if there was a change in the caregivers' health, which

might alter the context, the values, the roles and the way that caregivers and mentally challenged individuals perceive themselves and the world.

Finally, high generalizability can be attained through this study as the participants came from various demographic backgrounds seeking medical consultation. Caregiving constitutes a unique task that requires specialized abilities that can be found in people that are characterized as self-efficient and conscientious. Moreover, the psychologist exerted minimum control over the study resulting in the reduction of the generalization restrictions and internal validity was ensured by following trial protocols and statistical evaluations.

## Statements

### Compliance with ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Saint Andrews General Hospital and Hospital and the Greek Ministry of Health research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. According to the author no private or public sector sponsored the present research.

### Conflicts of interest

- a. The author declares she has no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.
- b. Informed consent was obtained from all individual adult participants included in the study.

### Data availability

The author has access to the original data on which the article reports.

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