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The role of core self-evaluations in the relationship between religious involvement and subjective well-being: a moderated mediation model

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This study examined whether core self-evaluations (CSE), a personality-based construct, mediates the association between religious involvement and subjective well-being (i.e., physical and psychological). Furthermore, investigates whether the indirect relation of religious involvement to well-being through CSE is conditional on age group (elderly vs. adults). Two different samples were examined: an elderly ($N = 300$) and an adult community sample ($N = 294$). To determine whether the strength of these effects depend on (moderated by) age group, we used multiple regression analyses and bootstrapping framework to probe conditional indirect (i.e., moderated mediation) effects. The results showed that CSE mediates the relationship between religious involvement (i.e., religious attendance and intrinsic religiosity) and both aspects of subjective well-being. However, the moderated mediation models revealed that this mechanism exists only for elderly. Implications of these results for improving the quality of life in elderly are discussed and directions for future research are provided.

Keywords: religious involvement; core self-evaluations; moderated mediation analysis; elderly; well-being

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In recent decades, a growing number of studies focusing on religious involvement provide evidence for its significant role in everyday life, and health and well-being (for reviews see, McCullogh, Hoyt, Larson, Koenig, & Thoresen, 2000; Powell, Shahabi, & Thoresen, 2003; Thoresen & Harris, 2004). Religious involvement is a multi-dimensional process, which refers to the personal beliefs and experience connected to religion, and includes overt behaviours (public or private), beliefs, goals and values, and subjective experiences (Pargament, 1997; Thoresen & Harris, 2004).

A large number of studies and reviews conclude that in general there is a "positive" relationship between different aspects of religious involvement and well-being. For instance, both frequent church attendance and subjective religious experiences (intrinsic religiosity) have been associated with the practice of better health behaviours, such as eating behaviour, alcohol use, and sexual practices (Burris, Smith, & Carlson, 2009; Park, Edmondson, Hale-Smith, & Blank, 2009). Additionally, recent evidence suggests that more frequent church attendance or prayer are associated with better physical health (Lawler-Row & Elliott, 2009; Powell et al., 2003; Thoresen & Harris, 2004), reduced

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incidence of stroke (Colatonio, Kasl, Ostfeld, & Berkman, 1993), decreased mortality (McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000), and better heart surgery outcomes (Contrada et al., 2004). Furthermore, Giaquinto, Spiridigliozzi, and Caracciolo (2007) reported that religious beliefs is a potential protective factor against emotional distress in a sample of patients with stroke, while Johnstone and Yoon (2009) reported that religious (emotional) experiences and forgiveness were associated with better outcomes in an heterogeneous rehabilitation population. Finally, Karademas (2010) found that intrinsic religiosity was indirectly associated with higher levels of cardiac patients' subjective health, while Rosmarin, Krumrei, and Andersson (2009) found that religious beliefs were related to less psychological distress.

The vast majority of the aforementioned reported findings are coming from a quantitative tradition. There are, however, findings from the qualitative tradition, within which researchers using alternative methodology (e.g., interviews, content analysis, etc.) try to identify the specific mechanisms of the religion–health connection. For example, Holt, Lewellyn, and Rathweg (2005), using semi-structured interviews, identified several mechanisms through which religiosity affects health and well-being; examples of identified themes include that God has a role in health (e.g., spiritual health locus of control), religiousness helps cope with stress, religiousness brings positive effect, and religion and/or scripture provides a basis for a healthy lifestyle. In another study, Holt, Schulz, and Wynn (2009), examined the perceptions of the role of religiousness on health among African Americans in urban and rural areas. They found that the vast majority of the participants agreed with the idea that there is a connection between religiousness/faith and health, and felt that God plays an important role in their health. Finally, Roff, Simon, Nelson-Gardell, and Pleasants (2009), using content analysis, found that among the primary sources of spiritual support among breast cancer survivors were God and members of religious communities.

A central focus in the study of religious involvement and in its relationship with well-being is the effect of age. Prospective studies have shown that religious involvement in adulthood can predict physical and psychological health many years later in later life (Koenig & Vaillant, 2009; Wink & Dillon, 2003). Also, a large body of empirical work suggests that religious involvement in late life is related to longer life (e.g., McCullough et al., 2000), better adaptation to stress (e.g., Park, 2007), lower physical disability (e.g., Idler & Kasl, 1997), higher levels of subjective well-being (e.g., Cohen & Hall, 2009), faster recovery from depression (e.g., Koenig, Parkerson, & Meador, 1997) and greater life satisfaction (e.g., Lee, 2007). Furthermore, according to Barna (1996), religion and religious involvement seem to play an increasingly important role as the age increases. Thus, if this indeed is the case, then there is a possibility that religious involvement is functioning in different ways at different age groups.

A limitation in the study of religious involvement refers to the lack of research examining the pathways through which it is related to health and well-being (Thoresen & Harris, 2004). The beneficial impact of religious involvement to well-being might be attributed to various psychosocial factors, such as self-esteem (Le, Tov, & Taylor, 2007), self-efficacy (Fischer, Greitemeyer, Kastenmüller, Jonas, & Frey, 2006), self-regulation (McCullough & Willoughby, 2009), optimism (Salsman, Brown, Brechting, & Carlson, 2005), social support (Hughes et al., 2004), etc. According to Oman and Thoresen (2005), it is possible that religious involvement influences proximate psychosocial mediators, such as those described earlier (i.e., higher levels of religious involvement lead to more optimism, higher self-efficacy, better self-regulation, etc.), which in turn affect physiological process (e.g., neuroendocrine functioning, immune system) that impact health. Likewise, it is

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possible that religious involvement represents a protective factor against stress, by means of promoting psychosocial factors, such as optimism and social support, which have repeatedly been related to better health (e.g., Schwarzer, 1992; Shnek, Irvine, Stewart, & Abbey, 2001; Symister & Friend, 2003). However, more evidence is needed in order to understand better the underlying mechanism of how religious involvement is related to physical and psychological well-being. Under this perspective, core self-evaluations (CSE), a new conceptualisation of dispositional traits that have been shown to be associated with important aspects of human functioning, could be tested as a potential psychosocial mediator that might affect the way that religious involvement interacts with subjective well-being.

The core self-evaluations

CSE, is a specific form of self-concept, and represent fundamental evaluations that people form concerning themselves, other people, and the world in general. It consists of four individual personality-related traits: (a) self-esteem, an individual's sense of self-worth; (b) generalised self-efficacy, an appraisal of one's ability to perform across situations; (c) neuroticism, a tendency to express negative emotionality; and (d) locus of control, the perception that outcomes are contingent upon either personal behaviour or external forces (Judge, Locke, & Durham, 1997). Judge, Erez, Bono, and Thoresen, (2002), argue that these constructs are relatively stable and affect our all appraisals concerning ourselves and world around us. Under this perspective, "...core-self evaluations is a basic, fundamental appraisal of one's worthiness, effectiveness, and capability as a person" (Judge, Erez, Bono, & Thoresen, 2003, p. 304).

CSE was initially theorised to be a second-order construct (Erez & Judge, 2001; Judge et al., 2003; Judge, Locke, Durham, & Kluger, 1998). However, recent studies have shown that although the four traits are conceptually similar and appear to have some unique variance, there is a "considerable redundancy" (Judge et al., 2003, p. 304) among them, which suggest that it is a higher-order latent construct with four indicators (Judge, Bono, & Locke, 2000; Judge, Bono, Erez, & Locke, 2005). Although CSE was initially introduced as a reliable predictor of numerous variables of interest in the workplace environment, such as job satisfaction (Bono & Judge 2003; Judge & Bono 2001), work performance (Judge et al., 1998), work success (Judge & Hurst, 2007), job burnout (Best, Stapleton, & Downey, 2005), turnover intentions (Harris, Harvey, & Kacmar, 2009), etc., recent studies have shown that it could also play an important role in a wide variety of other life situations. Empirical research suggests that CSE is related to academic achievement (Rosopa & Schroeder, 2009), career decision making (Koumoundourou, Tsaousis, & Kounenou, 2011), coping processes (Kammeyer-Mueller, Judge, & Scott, 2009), intrinsic motivation (Grant & Sonnentag, 2010), physical attractiveness (Judge, Hurst, & Simon, 2009), and emotional intelligence (Kluemper, 2008).

CSE and religious involvement

Although the relationship between religious involvement and CSE has never been examined, there is a small number of studies that have associated religious involvement with certain aspects of the core self-evaluation construct. In particular, self-esteem has been found to mediate the relation of religious involvement to depressive symptoms in a sample of adolescents (Le et al., 2007). Fischer et al. (2006) reported that self-efficacy

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mediated the relation of intrinsic religiosity to mood. Also, it is possible, though yet to examine, that locus of control represents a mediator in the religious involvement – well-being relation, since locus of control refers to perceptions of the extent to which agencies, including self, other, change, and, of course, God, affects personal behaviour. On the other hand, however, existing research does not support a significant relation of religious involvement to neuroticism (see, for example, Löckenhoff, Ironson, O'Cleirigh, & Costa, 2009; Saroglou, 2010; Wink, Ciciolla, Dillon, & Tracy, 2007).

CSE and well-being

A significant body of research has also shown that there is a direct link among CSE, life satisfaction and physical and psychological well-being. According to Judge et al. (1998) CSE is an important predictor of life satisfaction. Those with positive CSEs are predisposed to perceive life in a positive manner. They may view life events more positively and seek situations that enhance positive role fulfillment (Judge et al., 2000), and may work to minimise negative situations (Judge et al., 2005). Furthermore, Tsaousis, Nikolaou, Serdaris, and Judge (2007), have found that that CSE moderates the relationship between subjective well-being and physical functioning. Particularly, they suggested that individuals who have positive emotions and/or are satisfied with their lives and simultaneously are high CSE are more likely to demonstrate good physical health functioning.

Apart from the direct evidence that justify the relationship between CSE and well-being, there is a vast amount of research that correlates indirectly all four CSE components with physical and psychological well-being. Self-esteem (i.e., the sense of personal self-worth) is widely recognised as a central aspect of psychological functioning and is strongly related to general life satisfaction and psychological health (Crocker & Major, 1989; Diener, 1984). Furthermore, according to Taylor and Brown, (1988) higher levels of self-esteem are considered as one of the best mental health safety factors. Bandura (2001) argues that self-efficacy, an individual's appraisal of what they are capable of accomplishing in a given setting, is the key ingredient in human achievement and well-being. There is also evidence suggesting that locus of control, a belief system reflecting the extent to which people perceive personal control over their life, is directly related to different health outcomes such as stress (Berg, Hem, Lau, Håseth, & Ekeberg, 2005), depression (Arraras, Wright, Jusue, Tejedor, & Calvo, 2002), physical functioning (Burker, Evon, Galanko, & Egan, 2005), and general well-being (Spector et al., 2002). Additionally, Reich (1997) have shown that that people with an internal locus of control typically experience less anxiety and greater well-being than those who do not feel in control. Finally, there are numerous studies that show the negative effect of neuroticism on physical and psychological well-being (e.g., Bolger & Schilling, 1991; Emmons & Diener, 1985; Wismeijer, & van Assen, 2008).

The present study

The aim of the present study is to examine the relation of the three dimensions of religious involvement (i.e., religious attendance, private activity, and intrinsic religiosity) to subjective well-being (physical and psychological) through the specific form of self-concept called core self-evaluations. Our hypothesis was that all religious involvement dimensions are associated with core self-evaluations, which in turn are associated with physical

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(Hypothesis 1) and psychological (Hypothesis 2) well-being. Religious involvement is an important personal resource against adversity, as well as a broad personal characteristic that shapes thoughts, emotions and behaviour (Pargament, 1997; Thoresen & Harris, 2004). Also, religiousness is a central feature of the ways a person understands the world and the personal role in it, as well as purpose in life and main life goals (Pargament, 1997). Therefore, it is possible that religiousness guides perceptions about self and the interaction with the world, including perceptions about personal worth and abilities, which are also tapped within the concept of CSE (Judge et al., 2003). In this regard, it is possible that CSE represents a link between religiousness and well-being, given the strong relation of CSE to health (e.g., Judge et al., 1998; Judge et al., 2005). Furthermore, there is a further possibility the indirect relation of religious involvement to well-being through core self-evaluation to be conditional on age group (Hypothesis 3). If, as noted earlier, religious involvement does play a more important role in later age (Barna, 1996), then it is possible that age group (elderly vs. adults) moderates the effects of religious involvement to core self-evaluation. In other words, we hypothesise that the association between religious involvement and core self evaluation is statistically significant only in the elders. In this case, the entire ''religious involvement – core self-evaluation – subjective well-being'' relation would function only for that age group.

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Method

Participants

Two independent samples were used in this study; an elderly sample and an adult community sample. The elderly sample consisted of 300 individuals over 65 years of age (46.0% males) with a mean age of 74.19 years ($SD = 7.44$). The majority of the participants (56.8%) lived in rural areas. The adult community sample (18 to 65 years of age) consisted of 309 individuals who voluntarily participated in this study. Of them, 125 (40.5%) were males and 183 (59.2%) females. Their mean age was 37.33 years ($SD = 10.64$). Both samples were homogeneous in terms of ethnicity (Greek) and affiliation (Greek Orthodox).

Measures

Duke University Religious Index (DUREL; Koenig et al., 1997). The DUREL is a 5-item measure that assesses three distinct aspects of religious involvement: religious attendance (one item; attendance at religious services), private activity (one item; prayer or religious study), and intrinsic religiosity (three items; e.g., experience the presence of the Divine). Responses to the items of the organisational and non-organisational subscales are rated on a six-point frequency scale: (1) = never, (2) = once a year or less, (3) = a few times a year, (4) = a few times a month, (5) = once a week, (6) = several times a week. Responses on the items of the intrinsic religiosity subscale are rated on a five-point frequency scale anchored by (1) = definitely not true and (5) = definitely true. The scale has been used in numerous studies and its psychometric validity and reliability have been established (Koenig et al., 1997). In the present study, Cronbach's alpha for intrinsic religiosity was 0.86 for elderly and 0.81 for adults. No alpha could be estimated for religious attendance and private activity sub-scales, due to the fact that these scales are composed of a single item.

Core Self-Evaluations Scale (CSES; Judge et al., 2003). The CSES is a 12-item questionnaire that has been developed to operationalise the construct of Core Self-Evaluations. The main advantage of this questionnaire is that it has been designed to measure the underlying concept itself rather than the particular indicators of the concept. Despite the salience of the traits that compose this construct (self-esteem, generalised self-efficacy, locus of control, and neuroticism), it has been relatively uncommon for researchers to study these traits together. Even in the relatively rare case when the traits are studied together in personality research, generally they are treated as entirely separate variables with no discussion of their interrelationships or possible common core (Judge et al., 2003). Example items include, "I complete tasks successfully," "Overall, I am satisfied with myself," "Sometimes I feel depressed." There has been good psychometric support for the CSES. The items reflect a one factor structure, and the CSES correlates significantly with expected criteria (Judge et al., 2003). In this study, the scale yielded an alpha reliability of 0.87 in elderly and 0.78 in adults.

Physical and psychological well-being measure. Physical and psychological well-being was measured using a 17-item scale from *ASSET* (Cartwright & Cooper, 2002). ASSET is an occupational stress diagnostic tool, which also provides scores for physical and psychological health functioning. The physical functioning subscale comprises 6 items, while the psychological functioning subscale contains 11 items. Example items include, "Insomnia – sleep loss," "Headaches," "Constant irritability," "Mood swings." Individuals were asked to indicate on a 4-point scale (1 = *never* to 4 = *very often*), how often they were experiencing such behaviours. High scores on these scales indicate poor physical or psychological well-being. The manual reports extensive data on the reliability and validity of this inventory (see Cartwright & Cooper, 2002). Cronbach's alphas for this study were 0.77 and 0.89 (physical well-being) and 0.75 and 0.87 (psychological well-being) for elderly and adults, respectively.

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Procedure

The elderly sample was consisted from people who participated in a home care program. Trained investigators visited elderly people at their home and asked whether they were willing to participate in the study. After permissions were obtained and consent forms were singed, participants were called to complete a booklet containing the above measures in different order to control for order effect. For the recruitment of the community sample the snowball technique was used. One class of postgraduate psychology students was asked to volunteer in finding participants from the community. Each collaborator who volunteered was asked to locate ten participants, preferably five women and five men with an age range from 17 to 60. Each of the participants received a package containing all the above measures, a page with instructions for completing the questionnaires and a pre-paid envelop with instructions to mail the completed questionnaires back to our collaborators. No compensation was given for participation.

Statistical analysis

To determine whether the strength of these effects depend on (are moderated by) age group, we used the approach and SPSS syntax developed by Preacher, Rucker, and Hayes (2007). This approach is based on a multiple regression analyses and bootstrapping framework in order to probe conditional indirect (i.e., moderated mediation) effects.

In this study, we performed the analyses corresponding to Model 5 of the Preacher et al. (2007) approach. According to this model, the moderator (i.e., age groups) is assumed to affect both the path from the independent variable (that is, religiousness) to the mediator (that is, CSE), as well as from the mediator to the dependent variable (i.e., subjective well-being). In the analyses performed, the mediator was regressed on the independent variable, the moderator, and the interaction between the two. Also, the dependent variable was regressed on the independent variable, the mediator, the moderator, and the interaction between the mediator and the moderator. Furthermore, this approach determines whether indirect effects vary at different levels of the moderator (elderly group vs. adults group). Both normal-theory tests and bias corrected and accelerated bootstrapping are employed to test these effects, as the latter produces more accurate confidence intervals (for more details, we refer to Preacher et al., 2007). All data were checked for assumptions of normality and homogeneity of variance before parametric analyses.

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Results

Descriptive statistics, bivariate correlations and Cronbach's alphas for all the variables are presented in Table 1. An inspection of the correlations reveals that CSE is negatively related to both physical and psychological well-being, but this is applicable only to the elderly group. Similarly, CSE is positively correlated with the extrinsic expression of religiousness (i.e., attendance at religious services), suggesting that the more frequently a person attends religious services the higher the levels of his/her CSE. Again, this relationship concerns only the elderly group. Furthermore, religious attendance is the only religious involvement dimension that seems to be related (negatively) to physical and psychological well-being, suggesting that people who tend to attend religious services have higher levels of physical and psychological well being. Once more, this relationship occurs only in the elderly sample. Finally, significant age differences in all religious involvement dimensions, and physical and psychological well-being emerged. Particularly, elder people reported more religious involvement better psychological well-being but worse physical well-being than adults (see Table 1).

Table 1. Descriptive statistics and bivariate correlations among study variables.

	Variable	1	2	3	4	5	6
1.	Religious attendance	(–)	0.52**	0.55**	0.06	0.14	−0.06
2.	Private activity	0.40**	(–)	0.56**	0.01	0.11	0.06
3.	Intrinsic religiosity	0.47**	0.58**	(0.84)	0.03	0.18**	0.10
4.	Core self-evaluations	0.30**	0.05	0.06	(0.83)	0.04	0.24**
5.	Physical well-being	−0.19**	0.11	0.02	−0.56**	(0.76)	0.59**
6.	Psychological well-being	−0.22**	0.10	−0.01	−0.64**	0.71**	(0.88)
	Mean (*SD*) for adults	3.03	3.19	9.39	38.54	13.35	24.78
		(0.94)	(1.84)	(3.11)	(3.98)	(3.95)	(6.57)*
	Mean (*SD*) for elderly	3.69	4.01	11.24	38.83	13.98	23.64
		(1.39)**	(1.79)**	(2.87)**	(8.40)	(4.18)*	(7.44)
	Effect size (*d*)	0.56	0.45	0.62	0.04	0.15	−0.16

Notes: *$p < 0.05$, **$p < 0.01$.
Figures in the upper part of the table represent correlations among variables for the adult sample. Figures in the lower part of the table represent correlations among variables for the elderly sample. Figures in the diagonal are Cronbach's alphas for the total sample.

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Simple mediation

Firstly, we hypothesised that CSE would mediate the relationship between religious involvement and physical well-being (*Hypothesis 1*). We run three different simple mediation analyses, one for each dimension of religiousness involvement. We used a nonparametric resampling method (bootstrap, Shrout & Bolger 2002) with 5000 resamples to derive the 99% confidence interval for the indirect effect of the different religious involvement dimensions via the hypothesised mediator (CSE) to physical well-being, as it has been shown to produce better type I error rates and power, compared to conventional *CI*s (Preacher & Hayes, 2008). The bootstrapping procedure for religious attendance yielded an estimate of the indirect effect (unstandardised b coefficient) of -4.98, with a 99% *CI* ranging from -0.434 to -0.128. As this interval does not contain zero, the indirect effect (i.e., mediation effect) is significant at $p < 0.05$, thus indicating that CSE mediates the relationship between religious attendance and physical well-being. This analysis was repeated for the other two dimensions of religious involvement. Significant indirect effects were found only for intrinsic religiosity ($z = -2.74$; 99% *CI*s ranging between -0.12 and -0.01).

We also were interested in investigating whether CSE serves as a mediator of the religious involvement – psychological well-being relation (*Hypothesis 2*). Again, we run three separate analyses, one for each dimension of religiousness involvement. The results showed that there was a significant indirect effect between two religious involvement dimensions and psychological well-being: religious attendance ($z = -4.93$; 99% *CI*s from -0.78 to -0.21) and intrinsic religiosity ($z = -2.74$; 95% *CI*s from -0.20 to -0.01).

Moderated mediation

Moreover, we hypothesised that the indirect relation of religious involvement to physical and psychological well-being would be moderated by the age group (*Hypothesis 3*). According to Preacher et al. (2007), moderated mediation analysis should be applied only for variables found to be significant during the simple mediation analyses. Since CSE was not found to mediate the relationship between private activity and both dimensions of well-being we run moderated mediation analysis only for the remaining two dimensions of religious involvement (i.e., religious attendance and intrinsic religiosity) with the two dimensions of well-being (i.e., physical and psychological). In total, we run four separate moderated mediation analyses. In order to test these mediation and moderation analyses simultaneously, we utilise the conditional indirect effect model posited by Model 5 of Preacher et al. (2007), in which the indirect effect of religious involvement on subjective well-being through CSE is moderated by age group. In other words, the path from religious involvement to CSE *and* the path from CSE to subjective well-being are both proposed as moderated by age group. A 95% Bias Corrected *CI*s were generated (via bootstrapping, $n = 5000$) for both age groups. The results from these analyses are presented in Table 2. The first interaction term of each moderated mediation analysis presented in Table 2 indicate whether there is a significant moderation of the relationship between our independent and mediator variable and the second interaction term whether there is a significant moderation of the relationship between the mediator and our dependent variable.

Regarding the indirect relation of religious involvement to physical well-being through CSE, age group was found to affect the path from the mediator (i.e., CSE) to the dependent variable in both dimensions of religious involvement. Likewise, in case of the

Table 2. Moderated mediation of religious involvement to physical and psychological well-being through core self-evaluations (CSE), as moderated by age ($N = 609$).

	Physical well-being			Psychological well-being		
	B	*SE*	*t*	*B*	*SE*	*t*
Constant	39.21	3.00	13.07**	82.99	4.92	16.88**
Religious attendance	−0.69	0.39	−1.76	−0.64	0.64	−0.99
Age group	−14.36	2.38	−6.04**	−37.15	3.90	−9.52**
Religious attendance × age group	0.63	0.28	2.27**	0.48	0.45	1.06
CSE	−0.58	0.08	−7.65**	−1.51	0.12	−12.16**
CSE × age group	0.30	0.06	5.09**	0.95	0.10	9.71**
Conditional indirect effect at specific levels of the moderator						
	B	*SE*	*z*	*B*	*SE*	*z*
Elders	−0.50	0.11	−4.59**	−1.01	0.23	−4.46**
Adults	0.01	0.02	0.32	0.10	0.09	1.09
	B	*SE*	*t*	*B*	*SE*	*t*
Constant	36.49	3.22	11.33**	78.27	5.29	14.80**
Intrinsic religiosity	0.12	0.17	0.70	0.37	0.27	1.37
Age group	−13.27	2.45	−5.43**	−35.27	4.01	−8.78**
Intrinsic religiosity × age group	0.05	0.10	0.53	−0.08	0.17	−0.50
CSE	−0.61	0.07	−8.25**	−1.56	0.12	−12.87**
CSE × age group	0.32	0.06	5.47**	0.97	0.10	10.11**
Conditional indirect effect at specific levels of the moderator						
	B	*SE*	*z*	*B*	*SE*	*z*
Elders	−0.15	0.06	−2.47**	−0.30	0.12	−2.49**
Adults	0.01	0.01	0.23	0.01	0.03	0.42

Note: *B = unstandardised b coefficients; SE = standard error.*
**$p < 0.01$.

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indirect relation of religious involvement to psychological well-being through CSE, age group was found to affect the path from the mediator (i.e., CSE) to the dependent variable in both dimensions of religious involvement. In case of physical well-being, however, it was found that there was also a significant moderation of the relationship between our independent (religious attendance) and mediator variable (CSE).

As mentioned earlier, moderated mediation analysis determines also whether indirect effects vary at different levels of the moderator (elderly group vs. adults group). Thus, the indirect effect of religious attendance to physical well-being yielded a bootstrap corrected and accelerated confidence interval of −0.72 to −0.29 for elders, and −0.02 to 0.07 for adults (not listed in Table 2). Since only the interval for elderly does not contain zero, the only conditional indirect effect that is significantly different from 0 at $p = 0.05$ is that of elderly group. Similarly, the indirect effect of intrinsic religiosity to physical well-being yielded a bootstrap corrected and accelerated confidence interval of −0.27 to −0.04 for elderly, and −0.01 to 0.02 for adults. Since only the interval for elderly does not contain zero, the only conditional indirect effect that is significantly different from 0 at $p = 0.05$ is that of elderly group.

The indirect effect of religious attendance to psychological well-being yielded a bootstrap corrected and accelerated confidence interval of −1.47 to −0.58 for elders,

and −0.07 to 0.30 for adults. Since only the interval for elderly does not contain zero, this is the only conditional indirect effect that is significantly different from 0 at $p = 0.05$. Likewise, the indirect effect of intrinsic religiosity to psychological well-being yielded a bootstrap corrected and accelerated confidence interval of −0.54 to −0.07 for elderly, and −0.05 to 0.08 for adults. Since only the interval for elderly does not contain zero, the only conditional indirect effect that is significantly different from 0 at $p = 0.05$ is that of elderly group.

Discussion

The primary purpose of this research was to examine when and how the different aspects of religious involvement (i.e., religious attendance, private religious activity, and intrinsic religiosity) are associated with subjective well-being (i.e., physical and psychological). Particularly, we were interested in investigating whether CSE, a specific form of self-concept, could act as a mediator in the relationship between religious involvement and subjective well-being. Our hypothesis was that religious involvement is associated with CSE, which in turn is associated with both aspects of subjective well-being. Furthermore, we were interested in seeing whether the indirect relation of religious involvement to well-being through CSE is conditional upon age group (elderly vs. adults).

Firstly, the results showed that there is a significant relationship between religious attendance and both aspects of well-being. This result is in line with previous findings (e.g., Fabricatore, Handal, & Fenzel, 2000; Lawler-Row & Elliott, 2009; Powell et al., 2003; Thoresen & Harris, 2004) and provides further support to the argument that people who attend frequently religious services have better physical and psychological well-being. There are several theoretical reasons for expecting religious attendance to be connected with better physical and psychological functioning, especially in elderly. For example, religious services provide cohesive social network contacts which help people to overcome large and small life problems. Furthermore, such an environment offers mental and emotional stimulation which helps individuals to maintain cognitive and emotional functioning, especially in later life.

Previous studies have shown that religious involvement has a beneficial impact on well-being, but this has been attributed to several personality and personality-related variables, such as optimism, self-esteem, positive affect, locus of control, etc. (see Park, 2007; Powell et al., 2003), which act as mediators or moderators in this relationship and affect physiological process (e.g., neuroendocrine functioning, immune system), which in turn, impact physical and psychological functioning. The results from this study also support this hypothetical mechanism. Particularly, it was found that CSE, a special form of self-concept, mediates the relationship between two dimensions of religious involvement (i.e., religious attendance and intrinsic religiosity) and physical and psychological well-being. Specifically, it seems that attendance of religious services and intrinsic religiosity (through faith and spirituality) make religious individuals emotionally more stable, more secure and confident for controlling important life events that might affect them (high levels of CSE) than individuals that are less religious. Additionally, it provides an elaborated system of beliefs, (e.g., about God and human relationships), many of which are extremely relevant to life satisfaction and psychological well-being. These characteristics seem to help the individual to develop better coping mechanisms, and in turn, have a beneficial impact on the level of individual's physical and psychological functioning.

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Contrary to our predictions, the results showed no relationship between private activity and physical and psychological well-being. A possible explanation for this result could be the fact that, in Greek Orthodox Church, private activity (e.g., praying, religious study) is neither encouraged nor expected from believers, contrary to service attendance, for example, which represents a major aspect of religious as well as spiritual expression, constituting a more unbiased or clear indicator of religiousness as far as Greeks is concerned (Golitzin, 1996; Parry, Brady, Griffith, Melling, & Healey, 2000). This finding also underlines the fact that religiousness is a multi-facet factor (Thoresen & Harris, 2004). Each aspect of religiousness possibly represents a diverse way of experiencing religion and may serve a specific function within the overall personal relationship with the deity. Of course, several factors including socio-cultural differences may determine the differentiated impact of each of these aspects on the person and his/her functioning. In this aspect, much more research is needed in order to examine the role of each specific aspect of religious involvement in different socio-cultural environments and different denominations.

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However, we did not expect this indirect effect to be constant across all individuals. In line with findings from previous studies showing that religious involvement plays an important role in everyday life of elderly (Fabricatore et al., 2000; Idler & Kasl, 1997), we expected that the indirect pathway would be significant only for people over 65 years of age (i.e., a moderated mediation effect). Consistent with this hypothesis, we found that the indirect path of two of the religious involvement dimensions (i.e., religious attendance and intrinsic religiosity) was significant only for elderly people in both aspects of well-being. A possible explanation why there is a difference between the two age groups might be that religious involvement in elderly enhances evaluations about self, which in turn relate to better well-being. Contrariwise, as suggested by the results, religious involvement seems to be irrelevant to the ways younger individuals perceive self. This may reflect either a shift in the personal view of self and the world (e.g., for elders religion may become increasingly important as a resource for dealing with existential fears (i.e., fear of death) or as a social support resource), or a shift at the societal – cultural level (e.g., young generations in Greece endorse modernist ideologies which are associated with secularism compared with older ones who are more traditional). However, further research is needed to examine these issues. For example, Sedikides and Gebauer (2010) recently showed in a meta-analysis that religiousness is indeed a means for self-enhancement (defined as socially desirable responding), while this effect was stronger in those samples that placed higher value on religiousness.

Many scholars have criticised the quality of previous research linking religious factors to physical and psychological health (e.g., Sloan & Bagiella, 2002; Sloan et al., 2000). They argue that in many cases the empirical evidence presented is flawed, since it is based on inappropriate designs, inadequate sampling techniques, and most importantly, misuse of statistics. As a result, researchers are often lead to inappropriately interpret correlational findings as demonstrating that religiousness caused better health status. Our findings demonstrate that some of the most interesting advances to be made in the study of religion and subjective well-being come not by examining simply the linear relationships among religious involvement and physical and/or psychological well-being, but by considering how personality-related variables such as CSE, indirectly effects people's health and psychological functioning. One of the main concerns in the study of religious involvement is related to its measurement. Religiousness is a complex issue and no clear consensus on how best to measure it has yet been emerged (Hall, Meador, & Koenig, 2008). Significant disagreement persists regarding the several different root-theories that ground varying

approaches to measuring religiousness within and across the disciplines of psychology, sociology, theology, and medicine. Consequently, many of the existing tools for measuring religious involvement are of mixed quality: for example, some of them consist of a single question, some others measure only a particular aspect of religiousness (e.g., intrinsic religiosity), while some others have been narrowly conceived in terms of Western traditions of organised religion, primarily Protestant Christianity. Under this perspective, one of the advantages of this study is the use of DUREL for the measurement of religious involvement. DUREL is a measure that is grounded in a multi-dimensional approach and assesses three aspects of religious involvement: public or organisational religious behaviour, private or non-organisational religious behaviour, and intrinsic religious motivation. Furthermore, its sound psychometric properties (Hall et al., 2008) justify its scientific quality, and seem to avoid some of the conceptual and methodological difficulties noted above.

It should be noted at this point, that the results presented in this study are subject to the limitations of the design adopted (i.e., cross-sectional). Although the use of mediational logic implies a causal chain that goes from a predictor variable (e.g., religious involvement) to a mediator variable (e.g., CSE) to an outcome variable (e.g., physical/psychological well-being), such propositions cannot be rigorously evaluated on the basis of the cross-sectional data available in this study. Longitudinal data would help address these important causal issues. Related to this, it is important to note that variables not measured in this study also might account for the significant relationship between religious involvement and subjective well-being (e.g., life stressors, quality of life, etc.). Thus, further research is needed to better understand what may mediate the relationship between religious involvement and physical and psychological well-being.

Another limitation of this study comes from the fact that all participants were Greek Orthodox. Differences in language, teachings, and practices across diverse religious groups are likely to be especially relevant to matters of physical and psychological well-being. For instance, it is uncertain to what extent results would generalise to Christians from other affiliations (e.g., Catholics, Protestants) or who live in other parts of the world with a different psychosocial environment. It also is unclear how mediation effects would generalise to non-Christians that likely would show even greater differences in theology and prescribed practices than the posited differences among Christians. For example, the Hindu concept of karma has no direct equivalent in Western religions, yet it may hold significant implications for well-being (see e.g., Dalal & Pande, 1988). Future research in other countries and with non-Christian religious traditions is necessary to advance this literature (Snibbe & Markus, 2002). On the other hand, the majority of studies regarding religiousness have been conducted in English-speaking populations. In this respect, the examination of the role of religious involvement in different cultural contexts is necessary (Thoresen & Harris, 2004) and this study, contributes to that end.

One could argue that the two samples might not differ just in terms of age as we imply in this study. Indeed, previous research has shown that religiousness is affected by many different socio-demographic variables. For example, Taylor, Mattis, and Chatters (1999) found that among African Americans, subjective religiousness varied apart from age, by region as well as marital status and gender. Thus, further exploration is needed in order to see whether other socio-demographic variables could serve as moderators in the relationship between religious involvement and well-being.

Finally, future research effort should include complementary research on the particular "pathways" trough which religious involvement is connected to well-being. In order to

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explore the nature and the underlying mechanisms through which religious involvement affects human life, both quantitative as well as qualitative methodology is needed, in an attempt to corroborate and complement findings in a way that that the resulting mixture or combination of methods would help them to come up with explanations that would have been missed if only a quantitative or a qualitative approach had been used. As noted by Clarke and Yaros (1988), combining research methods is useful in some areas of research, because the complexity of phenomena requires data from a large number of perspectives.

In terms of practical implications, the results of this study can help service providers to understand and evaluate the impact of religious involvement in elder's well-being. For example, health/mental health professionals could integrate religious issues into the more typical psychosocial interventions, as well as collaborate with the local faith-based communities in order to provide elderly individuals with real-life-based community intervention programmes, which will "take advantage" of the already available community resources (i.e., religious groups, cleric work, etc).

Concluding, the results from this study showed that CSE, a specific form of self-concept, mediates the relationship between religious involvement and subjective well-being in elderly. Religious involvement, through spirituality and faith, seem to build up an intrapersonal framework within which individuals develop a fundamental appraisal mechanism regarding their worthiness, effectiveness, and capability as persons. This mechanism appears to be very beneficial in elderly, since it helps them to boost their confident, and consequently, to become more efficient in dealing with complexities related to physical and psychological functioning.

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