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RESEARCH PAPER

Assessing the Impact of the Way of Saint James on Psychological Distress and Subjective Well-being: The Ultreya Study

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Abstract
This study aimed to examine the impact of a pilgrimage on the Way of St. James on psychological distress and subjective well-being, and to compare these outcomes with a control group on non-pilgrimage vacations. Additionally, the study explored psychological process variables that may mediate the pilgrimage's beneficial effects. A nonrandomized pretest-posttest design was used, involving 444 pilgrims and 124 controls. Participants completed baseline and post-experience self-reported measures of psychological distress, subjective well-being, and psychological processes (i.e., mindfulness, nonattachment, engaged living). A 3-month follow-up was conducted only in the pilgrim group. Mediation analyses examined psychological processes as potential mediators of pre-post change in the pilgrim group (vs. control). Within-group analyses revealed that the pilgrim group experienced improvements in psychological distress, subjective well-being, and psychological processes immediately post-experience, with most measures sustaining improvement at the 3-month follow-up. Compared to the control group, pilgrims showed significantly greater increases in positive affect, life satisfaction, and valued living, alongside greater reductions in anxiety, depression, and perceived stress. Valued living partially mediated the relationship between pilgrimage and positive affect, and fully mediated the effects on perceived stress, negative affect, life satisfaction, and subjective happiness. Pilgrimage on the Way of St. James effectively reduced psychological distress and enhanced subjective well-being, with greater benefits observed compared to a non-pilgrimage vacation control group. Consistent with the concept of pilgrimage as a transformative experience, significant improvements in valued living were noted, which mediated some of the positive outcomes post-pilgrimage. The Way of St. James may serve as a valuable complementary approach for alleviating distress and promoting well-being. Further studies exploring the effects of this pilgrimage on specific populations and using more robust study designs are warranted.
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1 Introduction

Pilgrimage is defined as a journey undertaken in search of a place or state that embodies a set of ideals (Morinis, 1992). Historically, individuals have embarked on pilgrimages to honour and establish their connection with gods, nature, and supernatural forces, and it holds significance in most religions (Munro et al., 2017). There are numerous pilgrimages around the world, and millions of individuals travel to sacred sites every year (Davidson & Gitlitz, 2002). After a considerable period of scarce interest, pilgrimages, such as the Spanish "Camino de Santiago" (The Way of St. James in English), have progressively gained popularity since the 1990s (Mitchell-Lanham, 2015).

Contemporary pilgrimage is highly diverse and no longer uniquely related to religious motivations of self-sacrifice, piety, or devotion (Amaro et al., 2018; Brumec et al., 2023), but instead driven by intrinsic motivation based on inner needs and wishes (Ryan & Deci, 2000). This shift emphasizes intrinsic motivation as central to personal change, with pilgrimage offering a unique setting for such transformation. For example, Schnell and Pali (2013) reported that most pilgrims undertake the Way of St. James for personal clarification purposes. Both religious and secular pilgrimages share several aspects, such as the ritualistic nature of the experience, the journey towards a place considered special, the cultural and mythological underpinnings of the pilgrimage, the presence of social and spiritual phenomena, and the transformative and "curative" aspects of the experience (Dubisch & Winkelman, 2014; Jørgensen, 2017; Warfield et al., 2014).

The Way of St. James (commonly known as "The Way" or "El Camino"), one of Europe's oldest pilgrimages dating back to the tenth century, has become the largest outdoor tourism industry globally, attracting over 400,000 individuals annually (Editorial Buen Camino, n.d.; Oficina del Peregrino, n.d.). This pilgrimage consists of various routes across Europe, all culminating at Santiago de Compostela in the northwest of Spain. Motivations for undertaking the Way of St. James are diverse and include religious, existential, relational, natural, spiritual, cultural, sport, and health-related reasons (Amaro et al., 2018; Jørgensen, 2017; Schnell & Pali, 2013). Regardless of the initial motivation for embarking on the Way, the experience has a profound and enduring impact on participants, shaping their lives in lasting ways (Lopez, 2013; Murray, 2014). Despite growing interest in pilgrimage, scientific research on the effects of pilgrimage on mental health remains limited, particularly concerning its therapeutic mechanisms (Jørgensen, 2022; Komyathy, 2022; Warfield et al., 2014).

1.1 Pilgrimage and Mental Health

Jerome Frank's seminal work, "Persuasion and Healing" (Frank, 1961), provides a valuable framework for understanding the common factors underlying various healing processes, including psychotherapies and traditional rituals such as pilgrimage. Frank identifies three fundamental elements present in any healing process: the healing place, the myth (or framework), and the ritual. The Way of St. James exemplifies all these elements, functioning as a healing place with over 1,000 years of history, a powerful myth surrounding the burial place of the apostle James, and a series of rituals such as reaching the Plaza del

Obradoiro and obtaining the "Compostela" (i.e., official certificate given to pilgrims who complete at least the last 100 kms on foot).

Pilgrimage encompasses various aspects that can positively influence mental health, including disengagement from daily routines, walking in natural surroundings, spending time in solitude, experiencing detachment from material possessions and the pressures of consumerism, fostering a sense of community, and facilitating the acquisition of a broader perspective on life and personal values (Jørgensen et al., 2020; Malis et al., 2023; Sørensen & Høgh-Olesen, 2023; Warfield et al., 2014; Watson & Howell, 2023).

A crucial aspect of pilgrimage is the connection to the present moment, a fundamental component of mindfulness, defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the experience, moment by moment" (Kabat-Zinn, 2003, p. 145). Mindfulness has been shown to benefit mental health by reducing psychopathology and promoting well-being (Tomlinson et al., 2018). Pilgrimage provides an ideal context for developing such skill (Leong et al., 2024). Pilgrimage may enable individuals to fully appreciate the present moment, akin to meditative retreats and mindfulness practices (Eddy, 2012; Norman & Pokorny, 2017). Indeed, a research investigation within the Ultreya study observed an increase in dispositional mindfulness following the Way of St. James (Feliu-Soler et al., 2021a, 2021b). Meditative retreats have been linked to reductions in anxiety, depression, and stress and improved emotional regulation and quality of life (Khoury et al., 2017). Moreover, contact with nature, which is a significant part of the Way as it mostly passes through forests and fields, promotes introspection and impacts a pilgrim's state of consciousness (Schnell & Pali, 2013). The repetitive act of walking for several hours a day over consecutive weeks may also induce states of transcendence, heightened awareness, and self-discovery (D'Aquili et al., 1979; Jørgensen, 2017).

Nonattachment is another distinct yet closely related construct to mindfulness, which can be cultivated through meditation. It is described as a flexible and balanced approach to one's experiences without clinging to or suppressing those experiences (Sahdra et al., 2010, 2016). Nonattachment is positively associated with well-being and negatively with psychological distress (Ho et al., 2022b). In this sense, pilgrimage may promote a simpler life that can help reduce material attachment and appreciate the value of what is lived and possessed (Amaro et al., 2018; Devereux & Carnegie, 2006).

Pilgrimage offers time in solitude and silence, allowing for reflection on personal values, gaining mental clarity, and clarifying aspects that are essential to one's sense of meaning in life (Schnell & Pali, 2013). In this regard, various authors (e.g., Frey, 1998; Jørgensen, 2017) suggest that pilgrimage enhances introspection, self-discovery, emotional awareness, and the release of personal burdens while emphasizing living in the present moment. These psychological phenomena experienced during the Way of St. James may help clarify personal values and meaning in life, bring about a change of perspective that aids in resolving pending issues, reorganize personal priorities (Schnell & Pali, 2013), and facilitate the re-evaluation and confirmation of life values (Jørgensen, 2017). For example, a recent publication from the Ultreya study reported increased engaged living, including the alignment with personal values and a sense of life fulfilment after the St. James Way (Navarrete et al., 2023). Another study reported improved meaning in life, commitment to personal development, and self-transcendence immediately after and four months following the completion of the pilgrimage, regardless of the participants' initial motivations for undertaking the journey (Schnell & Pali, 2013).

Furthermore, walking pilgrimages, involving long-distance walking in nature, are linked to positive health outcomes (Bowler et al., 2010; Hartig et al., 2014; Mau et al., 2021).

Walking in nature can reduce ruminative thinking and maladaptive patterns of self-referential thinking, associated with depression and mental illnesses (e.g., Bratman et al., 2015; Kuehner et al., 1999; Nolen-Hoeksema, 2000), and engaging in simple activities involving nature for just a few days may enhance aspects of both hedonic and eudaimonic well-being (Passmore & Howell, 2014). Specifically, regular exercise and interaction with nature are known to improve depressive symptoms (Berman et al., 2012; Schuch et al., 2017). For example, a recent study found that physical activities like outdoor walking and running reduce depressive symptoms, particularly when performed in natural settings with social interactions (Matias et al., 2022). These authors suggest that the most significant benefit of physical exercise occurs when performed in natural settings and accompanied by others, highlighting the potential of nature and social connections, also emphasized as the main beneficial factor in pilgrimage walking by Jørgensen et al. (2020). In that sense, pilgrimage provides an ideal context to increase physical activity and the frequency and quality of relatedness to nature and social interactions, which has been suggested to be related to improvements in mental health (Gariépy et al., 2016; Jørgensen et al., 2020; Schnell & Pali, 2013). Moreover, Jørgensen et al. (2020) suggest that the therapeutic factors that bring about health in pilgrimage walking are long-distance walking in nature and social context.

While several qualitative studies have explored the relationship between pilgrimage and mental health, quantitative research remains sparse. One of the earliest studies on the subject, which examined the relationship between pilgrimage and mental health, found that 24 individuals with neurological and cardiovascular conditions experienced a reduction in symptoms of anxiety and depression after going on a pilgrimage to the sacred place of Lourdes in France (Morris, 1982). Another more recent study of 350 university students found that a religious pilgrimage to Mecca led to a decrease in levels of anxiety, depression, and stress while also increasing the participants' sense of meaning in life (Bakhtiari et al., 2017). Similarly, a different study on 50 individuals experiencing religious issues found that those who went on a two-week pilgrimage (in Hungary and Romania) reported less anxiety, depression, and rumination compared to a control group of individuals who went on non-pilgrimage holidays (Kéri, 2023).

One of the few quantitative studies that have examined the effects of the Way of St. James on psychological variables (Schnell & Pali, 2013) asked 85 pilgrims to rate to what extent they perceived their lives as meaningful before, after, and four months after completing the pilgrimage. The study found that regardless of the reason for the pilgrimage, there was an improvement in how pilgrims perceived their lives as meaningful. After completing the pilgrimage, pilgrims also showed a more significant commitment to developing their personal capacities and a greater orientation towards self-transcendence. Similarly, a recent study by (Brumec, 2021) exploring changes in the personal hierarchy of values following a pilgrimage to Way of St. James, conducted with 500 participants, showed that after completing the Way, there was a greater emphasis on values that prioritize the welfare and interests of others (universalism, benevolence) and a reduction in the importance of values that emphasize self-interest, relative success, and dominance over others (power, achievement). Additionally, the study found increased openness to change and conservation values after the pilgrimage.

1.2 The Ultreya Study: Aims and Hypotheses

To our knowledge, no large-scale studies have explored the effects of the Way of St. James on psychological distress and subjective well-being using comprehensive and validated

measures. This gap limits the validity of the obtained results and their applicability in the healthcare context. Additionally, previous studies have not examined potential psychological mediators to understand how therapeutic change occurs during pilgrimage and how this change may overlap with other experiences, such as psychotherapy. Another limitation in previous studies is the lack of control groups when evaluating the beneficial effects of the Way of St. James. This omission limits the potential to determine whether the specific effects of the pilgrimage are distinct from those of simply taking a vacation and disconnecting from routine. Therefore, including appropriate control groups, such as non-pilgrimage vacationers, is crucial for disentangling these specific effects. Previous research indicates that vacations positively impact health and well-being, although these effects diminish shortly after returning to work (De Bloom et al., 2017; Yan et al., 2023). Moreover, at least one study has already used a control group of two-week non-pilgrimage vacationers to compare changes in psychophysiological variables after a Christian pilgrimage (Kéri, 2023) (Kéri, 2023), further supporting the suitability of this control group for studies on pilgrimage.

The present study aimed to evaluate the changes (pre-post and 3-month follow-up) in psychological distress, subjective well-being, and potential psychological process variables following a pilgrimage on Way of St. James and to compare pre-post changes to those experienced by a convenience sample of individuals on non-pilgrimage vacations. A secondary aim of the study was to explore potential psychological process variables that mediate the relationship between pilgrimage (vs. non-pilgrimage vacations) and their effects on psychological distress and subjective well-being.

We hypothesized that pilgrimage in the Way of St. James would be associated with significant improvements in all study variables, particularly in the short term, and that these improvements would be maintained at the 3-month follow-up. Furthermore, compared to the control group (i.e., vacationers), the pilgrim group would experience a larger decrease in symptoms of anxiety and depression, perceived stress, and negative affect, along with a greater increase in positive affect, satisfaction with life, happiness, mindfulness, nonattachment, and engaged living (i.e., valued living and life fulfilment). Additionally, we expected that potential psychological process variables such as mindfulness, nonattachment, and engaged living would mediate the association between pilgrimage and improvements in psychological distress and subjective well-being.

2 Method

2.1 Study Design

A prospective observational and quasi-experimental design was adopted. In the experimental group, participants were evaluated at 3 time points: before the pilgrimage, upon completion of the planned route, and 3 months after completing the Way of St. James. In the control group, participants were only evaluated before going on vacation and upon completion of vacations. The Ultreya study took place from July 2017 to July 2020, was registered at Clinicaltrial.gov (NCT04141813), and was approved by the Ethics Committee of the Sant Joan de Déu Foundation (PIC-141–19) and Aragón (CEICA; PI16/0239). The study followed the ethical principles outlined in the 1964 Declaration of Helsinki and its subsequent revisions.

2.2 Participants

Inclusion criteria for the pilgrim sample were as follows: adults (over 18 years old), willing to go on pilgrimage along the Way of St. James within the next month, ability to read and understand Spanish, access to the Internet, and having signed informed consent indicating a willingness to participate in the study. The exclusion criteria included individuals walking for less than four days and those with incomplete baseline data. For the vacationer sample, the inclusion criteria were: adults (over 18 years old), planning to take a vacation within the next month, able to read and understand Spanish, having Internet access, and providing signed informed consent to participate in the study. Exclusion criteria were individuals vacationing for less than four days, those with incomplete baseline data, or those intending to undertake the Way of St. James or any other pilgrimage during their vacation.

A total of 878 adults agreed to participate in the Ultreya study, but only 444 individuals (63.3% women, 42.68 ± 12.7 years old) indicated their intention to complete the pilgrimage within the specified time frame (i.e., the initial pool sample). Of this initial sample, 403 (91%) responded to the post-pilgrimage assessment, and 284 (64%) completed the follow-up assessment. A subset of 245 participants (55% of the initial sample) completed all three assessments — pre-pilgrimage, post-pilgrimage, and 3-month follow-up — and were included in the statistical analysis. Results from the *t*-test indicate that the average number of days of pilgrimage was higher in the completers sample —those who completed assessments at post and follow-up — ($n = 245$; $M = 10.6$; $SD = 7.77$) than in the non-completers sample —those who failed to complete post or/and follow-up assessments— ($n = 199$; $M = 8.97$; $SD = 6.32$); $t(146.35) = -2.44$; $p = 0.015$; $d = 0.23$. There were no statistical baseline differences in any of the study variables or baseline sociodemographic characteristics between completers and non-completers.

A convenience sample of 130 Spanish adults planning non-pilgrimage vacations was recruited for comparative purposes. Six participants from the vacationer sample were excluded because their vacation plans included the Way of St. James. Therefore, the valid sample for the vacationer group comprised 124 participants (69.4% women, 39.78 ± 10.7 years old). The demographic information of the initial samples of pilgrims and non-pilgrimage vacationers is presented in Table 1, while Fig. 1 illustrates the flowchart of participant enrolment and attrition throughout the study.

2.3 Procedure

Pilgrims were recruited from associations, hostels, and social networks associated with the Way of St. James (e.g., Facebook, Twitter, and Instagram) and the Way of St. James websites (e.g., Gronze and Xacobeo). Potential participants were directed to the study's website (www.estudiocamino.org), where they could find an overview of the study objectives and access the baseline online questionnaire via SurveyMonkey. After completing the pilgrimage, participants received links to online post-pilgrimage questionnaires, administered immediately after the pilgrimage and at a 3-month follow-up. Participants in the vacationer sample were recruited using the snowball technique and through social media platforms, including Facebook, Twitter, WhatsApp, and Instagram. They were also directed to the study's website (www.estudiocamino.org), where they could find an overview of the study objectives and access the baseline online questionnaire via SurveyMonkey. Similar to the

Table 1 Sociodemographic and Outcome Variables of the Initial Participants in the Pilgrim and Vacationer Samples

Variables	Pilgrim Initial Sample ($n=444$)	Vacationers Initial Sample ($n=124$)
Sociodemographics		
Sex, *n* women (%)	281 (63.3)	86 (69.4)
Age, *M* (*SD*)	42.68 (12.7)	39.78 (10.7)
Marital status, *n* (%)		
Single	189 (42.6)	31 (25)
Married/Living with a partner	181 (40.8)	88 (71)
Separated/divorced	58 (13.1)	3 (2.4)
Widowed	7 (1.6)	1 (0.8)
Nationality, *n* (%)		
Spanish	369 (83.1)	109 (87.9)
South America	43 (9.7)	8 (6.5)
Other Europe	26 (5.9)	5 (4)
EEUU/Canada	3 (0.7)	0 (0)
Others	3 (0.7)	2 (1.6)
Employment status, *n* (%)		
Employed	336 (75.7)	118 (95.2)
Unemployed	33 (7.4)	2 (1.6)
Student	34 (7.7)	3 (2.4)
Homemaker	2 (0.5)	0 (0)
Retired/Pensioner	32 (7.2)	1(0.8)
Other	7 (1.6)	0 (0)
Religion, *n* (%)		
Catholicism	246 (55.4)	43 (34.7)
Agnosticism	110 (24.8)	33 (26.6)
Atheism	67 (15.1)	40 (32.3)
Buddhism	10 (2.3)	4 (3.2)
Another religious affiliation	11 (2.5)	4 (3.2)
Years of scholarship, *M* (*SD*)	14.26 (2.8)	15.68 (1.3)
Days of pilgrimage/vacations, *M* (*SD*)	9.88 (7.2)	17.9 (7.5)
Psychological Distress, M (SD)		
Anxiety and Depression (PH-4; 0–12)	3.22 (3.03)	2.23 (2.26)
Perceived Stress (PSS-4; 0–16)	5.29 (3.27)	4.13 (2.45)
Negative Affect (PANAS-N; 5–25)	9.21 (3.45)	8.73 (2.57)
Subjective Wellbeing, M (SD)		
Positive Affect (PANAS-P; 5–25)	16.09 (3.9)	16.18 (3.53)
Satisfaction with Life (SWLS; 5–35)	22.51 (7.1)	25.14 (5.56)
Subjective Happiness (SHS; 1–7)	4.98 (1.29)	5.41 (0.99)
Process variables, M (SD)		
Mindfulness (FFMQ-12; 15–60)	41.03 (7.52)	43.9 (6.48)
Nonattachment (NAS-7; 1–6)	4.76 (0.97)	5.02 (0.73)
Engaged Living		

Table 1 (continued)

Variables	Pilgrim Initial Sample ($n = 444$)	Vacationers Initial Sample ($n = 124$)
Valued Living (ELS-VL; 10–50)	38.34 (7.04)	40.79 (4.85)
Life Fulfilment (ELS-LF; 6–30)	20.64 (5.16)	22.3 (3.69)

ELS-VL/LF = Engaged in Living Scale-Valued Living/Life Fulfillment; FFMQ = Five Facet Mindfulness Questionnaire; NAS = Non-Attachment Scale; PHQ-4 = Patient Health Questionnaire-4; PSS-4 = Perceived Stress Scale-4; SHS = Subjective Happiness Scale; SWLS = Satisfaction With Life Scale. The score range of the scale is in brackets

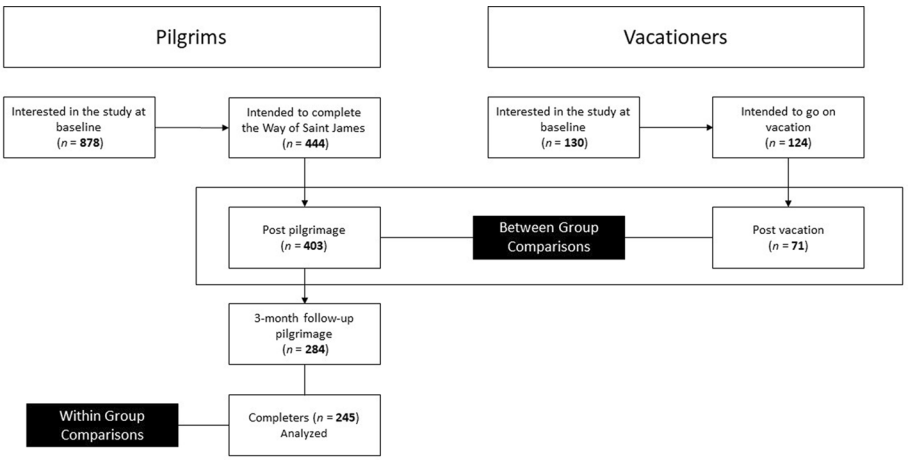

Fig.1 Flowchart of the Ultreya Study

pilgrim sample, vacationers received links to online questionnaires immediately after their vacations.

3 Measures

3.1 Sociodemographic Data

Sociodemographic data were collected for all participants, including age, gender, marital status, nationality, employment status, educational level, and religion.

3.2 Variables Associated with the Pilgrimage and Vacations

The following variables associated with the pilgrimage were collected at baseline for both the pilgrim and vacationer groups: duration of the experience, previous experience, whether the experience was undertaken alone or with others, and motivations for the

experience (e.g., religious reasons, personal growth, cultural interest, leisure). Additionally, for the pilgrim group, information on the specific pilgrimage route (e.g., French, Northern, Portuguese) and the means of transport (e.g., walking, biking, other forms of transport) was also gathered. To assess the quality of the control group, vacationers were additionally asked to rate their experience on a scale from 0 to 10, where 0 represented the worst vacation they had ever taken and 10 represented the best imaginable vacation.

3.3 Psychological Distress

The *Patient Health Questionnaire* (PHQ-4; Kroenke et al., 2009; Löwe et al., 2010). The PHQ-4 is a four-item scale assessing the frequency of depressive symptoms (such as depressed mood and anhedonia) and generalized anxiety symptoms experienced in the past two weeks. It consists of two items from the Patient Health Questionnaire (PHQ-2; Kroenke et al., 2003) and two items from the Generalized Anxiety Disorder Scale (GAD-2; Kroenke et al., 2007). Responses on the PHQ-4 are rated on a four-point Likert scale, ranging from 0 (*not at all*) to 3 (*nearly every day*). The total score ranges from 0 to 12, with higher scores indicating a higher presence of depressive and anxiety symptoms. The PHQ-4 shows good psychometric properties among Spanish samples (Cano-Vindel et al., 2018). In the current study, the internal consistency of the PHQ-4 was found to be adequate in the pilgrim and vacationer samples (pilgrims $\alpha = 0.83$; vacationers $\alpha = 0.73$).

Perceived Stress Scale—short form (PSS-4; Cohen et al., 1983). The PSS-4 is a 4-item questionnaire to evaluate individuals' appraisals of stressful situations experienced within the past month (S. Cohen et al., 1983). Responses are scored on a Likert scale, ranging from 0 (*never*) to 4 (*very often*); the total score ranges from 0 to 16. The Spanish version of the PSS-4 has sound psychometric properties (Herrero & Meneses, 2006). Adequate internal consistency of the PSS-4 was found in pilgrim and vacationer samples (pilgrims $\alpha = 0.76$; vacationers $\alpha = 0.64$).

The negative affect subscale (PANAS-NA; Thompson, 2007) from the *International Positive and Negative Affect Schedule—short form*. The PANAS-NA assesses negative affect using 5 items rated on a 5-point scale, ranging from 1 (*never*) to 5 (*always*). Scores range from 5 to 25, with higher scores indicating greater levels of negative affect. The Spanish adaptation of the PANAS has good psychometric properties (López-Gómez et al., 2015). In our study, the internal consistency was satisfactory, with Cronbach's alpha coefficients of 0.79 for pilgrim and 0.73 for vacationer samples.

3.4 Subjective Well-being

The positive affect subscale (PANAS-PA;Thompson, 2007) from the *International Positive and Negative Affect Schedule, short form*. The PANAS-PA assesses positive affect through 5 items in a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*) and scores ranging from 5 to 25, with higher scores indicating a greater presence of positive affect. The Spanish adaptation of the PANAS shows good psychometric properties (López-Gómez et al., 2015). A good internal consistency was found in study samples (pilgrims $\alpha = 0.82$; vacationers $\alpha = 0.82$).

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985). The SWLS assesses global life satisfaction, serving as a widely utilized measure of well-being worldwide. The SWLS comprises five items that participants rate on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Total scores on the SWLS range from 5

to 35, with higher scores indicating more satisfaction with life. The Spanish version of the SWLS has demonstrated robust psychometric properties (Vázquez et al., 2013). In the present study, the SWLS exhibited excellent internal consistency in the pilgrim and vacationer samples (pilgrims $\alpha = 0.90$; vacationers $\alpha = 0.84$).

Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). This measure of global subjective happiness consists of four items with a 7-point Likert scale. Responses range from 1 (*not at all*) to 7 (*a great deal*), with a higher score indicating higher levels of perceived happiness. The Spanish version of the SHS has good psychometric properties among clinical and non-clinical samples (Extremera & Fernández-Berrocal, 2014; Feliu-Soler, de Diego-Adeliño, et al., 2021). Adequate internal consistency was observed in the present samples (pilgrims $\alpha = 0.87$; vacationers $\alpha = 0.85$).

3.5 Process Variables

The 15-item short version of the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008; Feliu-Soler et al., 2021a, 2021b). The FFMQ measures the dispositional tendency to be mindful in daily life and consists of five distinct but related facets (i.e., observing, describing, non-judging of inner experiences, non-reacting to internal experiences, and acting with awareness). Participants responded to each item on a 5-point Likert scale, ranging from 1 (*never or very rarely true*) to 5 (*very often or always true*). A total mindfulness score can be computed by summing the item values, resulting in scores ranging from 15 to 75. Previous studies in samples of non-meditators have supported using a briefer version of the FFMQ-15 (i.e., the FFMQ-12), excluding the Observing subscale, as a shorter alternative with more solid psychometric properties (Feliu-Soler et al., 2021a, 2021b; Gu et al., 2016). For the present study, we used the 12-item FFMQ (FFMQ-12) version to calculate the total mindfulness score. Adequate internal consistency for FFMQ-12 was found in the current sample (pilgrim $\alpha = 0.79$; vacationers $\alpha = 0.80$).

Nonattachment Scale—short form (NAS-7; Devine et al., 2022; B. Sahdra et al., 2016). The NAS short form is a 7-item questionnaire derived from the 30-item Nonattachment Scale (NAS; B. Sahdra et al., 2010), which assesses the ability to adopt a flexible and balanced approach to experiences, without excessively clinging to or suppressing them. Participants rate their agreement on a 6-point scale, ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Total scores range from 7 to 42, with higher scores indicating a greater level of nonattachment. Adequate validity and reliability of the NAS-7 among Spanish samples have been reported (Feliu-Soler et al., 2016). In the present study, the NAS-7 exhibited adequate internal consistency within (pilgrims $\alpha = 0.85$; vacationers $\alpha = 0.78$).

Engaged Living Scale (ELS; Trompetter et al., 2013). It is a 16-item scale in which participants rate each item on a 5-point Likert scale (from 1 *completely disagree* to 5 *completely agree*). It comprises two subscales: Valued Living (ELS-VL; 10 items, with scores ranging from 10 to 50) and Life Fulfilment (ELS-LF; 6 items, with scores ranging from 6 to 30), designed to evaluate the capacity for recognizing and understanding one's own values and to act in alignment with them (VL) and for experiencing a sense of accomplishment in life through the identification and commitment to these personal values (LF). Higher scores indicate a greater perceived level of valued living or life fulfilment. The ELS has demonstrated good psychometric properties in previous studies (Navarrete et al., 2023; Trindade et al., 2016; Trompetter et al., 2013). In the present sample, both the VL and LF subscales exhibited excellent internal consistency (VL: pilgrims $\alpha = 0.94$; vacationers $\alpha = 0.87$ and LF: pilgrims $\alpha = 0.90$; vacationers $\alpha = 0.85$).

3.6 Statistical Analysis

First, multivariate repeated measures MANOVAs were computed in SPSS v26 to examine changes in the pilgrim sample at pre-, post, and follow-up assessments (within-group comparisons) and to compare pre-post differences between the pilgrim and vacationer groups (between-group comparisons). Partial eta squared was reported and interpreted as $\eta^2 = 0.01 = $ small, $\eta^2 = 0.06 = $ moderate, $\eta^2 = 0.14 = $ large effect (Richardson, 2011). Follow-up univariate analyses were performed using t-tests with the Benjamini–Hochberg procedure to account for multiple comparisons. Effect sizes were reported and interpreted according to Cohen (1988) ($d = 0.02 = $ small, $d = 0.05 = $ moderate, $d = 0.08 = $ large effect). Sociodemographic differences that were statistically significant at baseline between pilgrims and vacationers—based on the pre-post completers sample—were included in the analyses as covariates. Preliminary analyses were conducted to check for normality and multicollinearity of all variables involved in MANOVA, with no serious violations noted (Tabachnick & Fidell, 2013).

Mediation analyses were conducted to explore whether the relationship between the group (pilgrims vs. vacationers) and psychological distress and subjective well-being was mediated by psychological process variables. Several analyses were conducted to determine which mediation models to estimate. First, four regressions were estimated for each potential mediator to explore whether there is a significant association between the group (pilgrims vs. vacationers) and the process variables separately, adjusted for each variable's baseline values and covariates found to be significantly different between groups in the pre-post completers sample. These preliminary analyses allowed us to decide which mediational models had to be subsequently computed.

The mediation models were tested in Path analysis using the R package *Lavaan* and ML (Rosseel, 2012). The following paths were estimated: path a (from the group variable to the mediator), path b (from mediator to outcome), and c' (direct effect from group variable to outcome). In addition, covariates were included in the model. Additionally, the indirect (a × b) and total effects (direct effect [c'] + indirect effect [a × b]) were calculated. Bootstrapping ($n = 5000$ samples) was used to test the significance of the indirect effects. The indirect effect was considered significant at the 0.05 level if the 95% confidence level did not include zero (MacKinnon, 2003).

4 Results

4.1 Descriptive Statistics of the Pilgrim and Vacationer Groups

Table 1 presents the descriptive statistics of sociodemographic and study variables (i.e., psychological distress, subjective well-being, and psychological process variables) at baseline for the pilgrim ($n = 444$) and vacationer ($n = 124$) groups.

Regarding the pilgrimage characteristics, most participants undertook the French and Northern routes, comprising 48% and 27% of the sample, respectively. The majority of participants made the Way of St. James pilgrimage during the summer (19% in July, 40% in August, and 21% in September). Most pilgrims opted for a walking pilgrimage (96%), while a few preferred cycling (3%). The majority of pilgrims were accompanied by their partners (17%), friends (27%), or relatives (11%), whereas a considerable number (38%)

completed the pilgrimage alone. Nearly half of the pilgrims (48%) had previously done the Way of St. James. The reasons for undertaking the pilgrimage (non-exclusive options) included personal growth (71%), leisure and pleasure (46%), cultural interest (42%), physical fitness and health (41%), disconnecting from obligations (41%), spirituality (34%), clarification of personal values (33%), social purposes and meeting new people (27%), overcoming a challenging individual circumstance (22%), religious motivations (14%), fulfilling a promise (8%), and explaining the experience to friends or others (3%).

Regarding the characteristics of the control group, all participants took their vacations during the summer, with 21% in July, 75% in August, and 4% in September. Most vacationers travelled with their partners (40%), friends (22%), or relatives (57%), while a small number (5%) travelled alone. Nearly half of the vacationers (48%) had previously visited the same vacation destination. Additionally, about half (48%) reported that their vacations included physical exercise beyond their regular daily activities. The average vacation satisfaction score, on a scale from 0 (the worst vacation ever) to 10 (the best imaginable vacation), was 8.66 (SD = 1.56) as reported in the post-assessment. The reasons for undertaking vacations (non-exclusive options) included leisure and pleasure (74%), disconnecting from obligations (64%), cultural interest (32%), physical fitness and health (14%), social purposes and meeting new people (11%), personal growth (9%), spirituality (3%), clarification of personal values (2%), and overcoming a challenging personal circumstance (2%). No participants reported religious motivations, fulfilling a promise, or the desire to share the experience with friends or others as reasons for their vacations.

The average duration of the pilgrimage was 9.88 days (SD = 7.2; range: 4–37 days), whereas the average duration of the vacations was 17.9 days (SD = 7.5; range: 4–30 days).

4.2 Within-group Analysis in the Pilgrim Sample

4.2.1 Within Group Effects upon Completion of the Pilgrimage and at Follow-up

Sociodemographic characteristics of the pre-post-follow-up completers of the pilgrimage sample can be found in Supplementary Table 1. Table 2 presents the outcomes of the three separate repeated-measures MANOVAs conducted to assess the impact of time (pre-, post, and follow-up) on psychological distress, subjective well-being, and process variables. Additionally, post-hoc univariate repeated-measures ANOVAs were conducted for each dependent variable to identify the specific time points between which the differences occurred. These findings are visually represented in Fig. 2.

The MANOVAs yielded statistically significant main effects of time on psychological distress, $F(6,232) = 27.77$, $p < 0.001$; Wilks' Lambda = 0.58, $\eta 2 = 0.42$; subjective well-being, $F(6,217) = 23.09$, $p < 0.001$; Wilks' Lambda = 0.61, $\eta 2 = 0.39$, and process variables $F(8,205) = 11.72$, $p < 0.001$; Wilks' Lambda = 0.69, $\eta 2 = 0.31$. These results indicate differences in scores across the three time points (pre, post, and follow-up). Subsequent univariate tests for each dependent variable confirmed significant time effects ($p < 0.001$) in all variables.

Post hoc paired t-tests were conducted to explore whether the changes were statistically significant between baseline-post and follow-up assessments (see Table 2). The findings suggest that, when compared to baseline, following completion of the planned route (post and follow-up), pilgrims exhibited lower levels of anxiety and depression (post: $p < 0.001$; $d = -0.63$; follow-up: $p < 0.001$; $d = -0.33$), perceived stress (post: $p < 0.001$; $d = -0.45$; follow-up: $p < 0.001$; $d = -0.35$), and negative affect (post:

Table 2 Means, Standard Deviations and One-Way Repeated Measures MANOVAs for Psychological Distress, Subjective Well-being and Process Variables and Post-hoc Comparisons for the Pilgrim Sample

Measure	Baseline		Post		Follow-up		*Wilkins Lambda*	*F*	*Df*	*p*	*η2*	Baseline vs. Post			Baseline vs. Follow-up		
	M	*SD*	*M*	*SD*	*M*	*SD*						*p*	*d*	(95% CI)	*p*	*d*	(95% CI)
Psychological Distress							.58	27.77	6,232	**<.001**	.42						
Anxiety and depression	3.22	3.08	1.21	1.89	2.41	2.47		68.84	1,899	**<.001**	.23	**<.001**	−0.63	1.63; 2.39	**<.001**	−0.33	0.48; 1.13
Perceived Stress	5.11	3.33	4.12	3.02	4.17	2.97		19.23	1,970	**<.001**	.08	**<.001**	−0.45	0.66; 1.32	**<.001**	−0.35	0.57; 1.31
Negative Affect	9.20	3.52	6.68	2.10	8.12	2.70		78.71	1,910	**<.001**	.25	**<.001**	−0.65	2.03; 2.96	**<.001**	−0.34	0.69; 1.48
Subjective Wellbeing							.61	23.09	6,217	**<.001**	.39						
Positive Affect	16.37	3.94	19.24	3.65	16.80	3.98		59.39	1,977	**<.001**	.21	**<.001**	0.56	-3.45; −2.28	.126		−0.98; 0.12
Satisfaction with Life	23.08	7.01	25.23	6.39	24.36	6.36		24.83	1,915	**<.001**	.10	**<.001**	0.74	−2.74; −1.56	**.002**	0.35	−1.94; v0.62
Subjective Happiness	5.03	1.26	5.43	1.13	5.24	1.22		30.28	1,905	**<.001**	.12	**<.001**	0.73	−0.51; −0.29	**<.001**	0.45	−0.32; −0.11
Process Measures							.69	11.72	8,205	**<.001**	.31						
Mindfulness	41.61	7.01	43.21	6.98	44.08	7.20		22.99	1,986	**<.001**	.1	**<.001**	0.44	−2.32; −0.87	**<.001**	0.58	−3.22; −1.71
Nonattachment	4.78	0.97	5.03	0.79	4.95	0.86		11.08	1,911	**<.001**	.05	**<.001**	0.4	−0.36; −0.15	**.005**	0.21	−0.29; −0.05
Valued Living	38.86	6.57	40.70	5.93	40.28	6.47		15	1,919	**<.001**	.07	**<.001**	0.44	−2.55; −1.13	**<.001**	0.3	−2.16; −0.67
Life Fulfilment	20.95	4.88	22.99	4.51	22.18	4.65		33.78	1,937	**<.001**	.14	**<.001**	0.71	−2.55; −1.53	**<.001**	0.39	−1.75; −0.71

Wilkins Lambda for MANOVA, and Greenhouse–Geisser for ANOVAs. To account for multiple comparisons, the Benjamini–Hochberg correction was applied. The duration, in days, of pilgrimage was included as a covariate

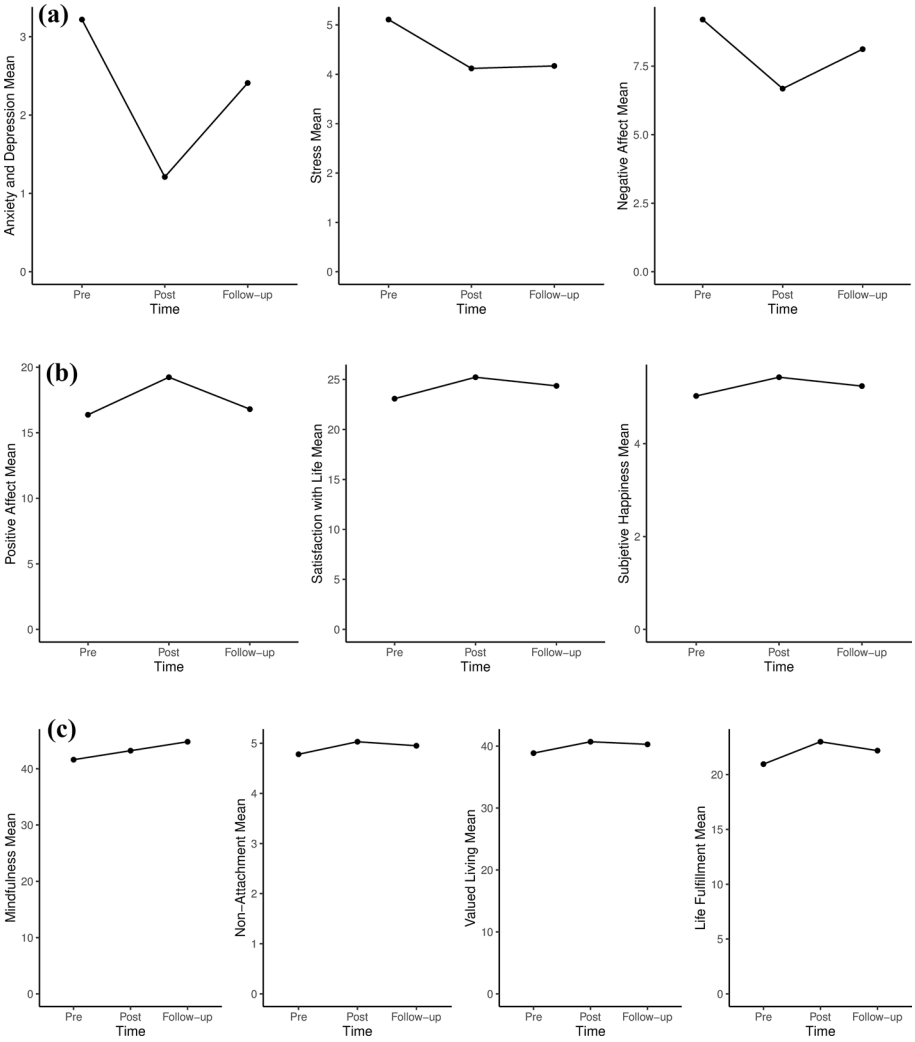

Fig. 2 Within group effects in the pilgrim sample

$p < 0.001$; $d = -0.65$; follow-up: $p < 0.001$; $d = $-0.34). Regarding subjective well-being and psychological process variables, compared to baseline at the post and follow-up, participants reported higher levels of positive affect (post: $p < 0.001$; $d = 0.56$; differences were not significant in follow-up assessment), of satisfaction with life (post: $p = 0.001$; $d = 0.74$; follow-up: $p = 0.002$; $d = 0.35$), subjective happiness (post: $p < 0.001$; $d = 0.73$; follow-up: $p < 0.001$; $d = 0.45$), mindfulness (post: $p < 0.001$; $d = 0.44$; follow-up: $p < 0.001$; $d = 0.58$), nonattachment (post: < 0.001; $d = 0.4$; follow-up: $p = 0.005$; $d = 0.21$), valued living (post: $p < 0.001$; $d = 0.44$; follow-up: $p < 0.001$; $d = 0.30$), and life fulfilment (post: $p < 0.001$; $d = 0.71$; follow-up: $p < 0.001$; $d = 0.39$). The results are displayed in Fig. 2.

4.2.2 Differences Between Pilgrims and Vacationers

Table 1 displays the sociodemographic and outcome measures of the initial participants in the pilgrim ($n = 444$) and vacationer samples ($n = 124$). Of them, 403 pilgrims and 71 from the vacationer group completed the measures at post and were included in the analysis. We analysed between-group differences in those with pre-post data (403 pilgrims vs. 71 vacationers; see Table 3). Compared to vacationers, pilgrims had fewer years of education, scored higher at baseline in anxiety, depression, and perceived stress, and scored lower in satisfaction with life, subjective happiness, mindfulness, nonattachment, and engaged living (valued living and life fulfilment). Results from the chi-squared tests indicated that the pilgrim sample, compared to the vacationer sample, included a higher proportion of men, Catholic, single, and non-employed participants. In addition, the average number of days spent on the experience (i.e., pilgrimage or vacations) was higher for the pilgrim group than the vacationer group (i.e., 18 vs. 10 days on average).

4.2.3 Pre-post Changes in Pilgrim and Vacationer Samples

Table 4 presents the results of three separate repeated-measures MANOVAs, examining pre-post differences between pilgrims and vacationers in psychological distress, subjective well-being, and process variables. To account for differences in demographic characteristics between the groups, the following covariates were included in the model: gender (women: Yes/No), religious affiliation (Catholic: Yes/No), relationship status (in a relationship: Yes/No), employment status (employed: Yes/No), years of education, and days spent on the experience. Additionally, univariate repeated-measures ANOVAs were conducted for each dependent variable as post-hoc analyses.

Results indicate a significant time x group effect for psychological distress, $F(3,444) = 3.21$, $p = 0.023$; Wilks' Lambda = 0.98, $\eta 2 = 0.02$; and subjective well-being, $F(3,416) = 4.56$, $p = 0.004$; Wilks' Lambda = 0.97, $\eta 2 = 0.03$. The time x group effect for process variables did not reach statistical significance ($p = 0.068$).

ANOVA for each study variable revealed a significant group x time interaction effect. The pilgrim group exhibited a more pronounced decrease in anxiety and depression ($p = 0.047$; $\eta 2 = 0.01$) and perceived stress ($p = 0.004$; $\eta 2 = 0.02$) compared to the vacationer group. Additionally, the pilgrim group demonstrated significantly greater improvements in positive affect ($p < 0.001$; $\eta 2 = 0.03$), satisfaction with life ($p = 0.039$; $\eta 2 = 0.01$), and valued living ($p = 0.004$; $\eta 2 = 0.02$), than the vacationer group.

4.3 Mediation Analysis

Four regressions were estimated for each psychological process variable (i.e., mindfulness, nonattachment, valued living, and life fulfilment). The predictor variable was the group categorized as pilgrims or vacationers (1 or 0, respectively). Each regression was adjusted for the baseline values of the process variable (used as the predictor) and the covariates (i.e., gender, days of experience, Catholic, in a relationship, employed, and years of education). The findings from the regressions indicate that the group was only directly associated with the valued living measure (the regression coefficient β for the predictor variable 'Group' predicting the outcome variable 'Valued Living' was 1.36 ($SE = 0.58$), indicating a

Table 3 Differences in the Sociodemographic and Baseline Variables between the Vacationers and Pilgrims (pre-post completers sample)

Variables	Pilgrims ($n=403$)	Vacationers ($n=71$)	t / χ^2 (df)	p	d/ Phi
Sociodemographics					
Female, *n* (%)	255 (63.3)	55 (77.5)	5.37 (1)	**.026**	0.11
Catholic, *n* (%)	222 (55.1)	23 (32.4)	12.45 (1)	**<.001**	-0.16
In a relationship, *n* (%)	159 (39.5)	51 (71.8)	25.64 (1)	**<.001**	0.23
Spanish, *n* (%)	336 (83.4)	64 (90.1)	2.1 (1)	.167	
Employed, *n* (%)	305 (75.7)	67 (94.4)	12.48 (1)	**<.001**	0.16
Age, *M* (*SD*)	42.48 (12.68)	39.28 (10.11)	2.02 (472)	.053	
Years of scholarship, *M* (*SD*)	14.26 (2.91)	15.94 (1.07)	−4.80 (471)	**<.001**	0.77
Days of the Experience, *M* (*SD*)	9.86 (7.08)	17.99 (7.15)	−8.9 (95.82)	**<.001**	1.15
Psychological Distress					
Anxiety and depression (PH-4; 0–12)	3.22 (3.03)	2.1 (1.99)	3.01 (472)	**.005**	0.44
Perceived Stress (PSS-4; 0–16)	5.28 (3.32)	3.94 (2.27)	3.25 (472)	**.002**	0.47
Negative Affect (PANAS-N; 5–25)	9.24 (3.44)	8.94 (2.61)	0.68 (472)	.525	
Subjective Wellbeing					
Positive Affect (PANAS-P; 5–25)	16.19 (3.94)	16.21 (3.76)	−.05 (99.06)	.963	
Satisfaction with Life (SWLS; 5–35)	22.49 (7.1)	25.44 (5.61)	−3.32 (472)	**.002**	0.46
Subjetive Happiness (SHS; 1–7)	4.96 (1.27)	5.45 (1.06)	−3.54 (108.61)	**.002**	0.42
Process Variables					
Mindfulness (FFMQ-12; 15–60)	41.09 (7.43)	44.48 (6.44)	−3.99 (105.59)	**<.001**	0.49
Nonattachment (NAS-7; 1–6)	4.76 (0.97)	5.06 (0.71)	−2.48 (472)	**.018**	0.32
Engaged living					
Valued living (ELS-VL; 10–50)	38.34 (7)	40.89 (5.14)	−2.93 (472)	**.006**	0.38
Life fulfilment (ELS-LF; 6–30)	20.62 (5.14)	22.7 (4.02)	-3.25 (472)	**.002**	0.45

ELS = Engaged in living scale; FFMQ = Five facet mindfulness questionnaire; GAD-2 = General Anxiety Scale-2; PHQ-2 = Patient Health Quesionnaire-2; PHQ-4 = Patient Health Quesionnaire-4 PSS-4 = Perceived Stress Scale-4; SHS = Subjective Happiness Scale; SWLS = Satisfaction With Life Scale. The Benjamini–Hochberg procedure (1995), a correction method, was applied to account for multiple comparisons. For continuous variables, the t-test and Cohen's d were employed, while for dichotomous variables, the Chi-square test and Phi coefficient were utilized

significant positive relationship, $p=0.019$). Consequently, it was determined that six mediation models with valued living as the mediator would be estimated for each outcome variable (see Supplementary Table 2).

Six path analyses were conducted for each of the psychological distress and perceived well-being variables. Each model included a path from the group (1 = pilgrims) to valued living and psychological distress and perceived well-being and a path from valued living to

Table 4 Means, Standard Deviations and Repeated-Measures MANOVAs for Psychological Distress, Subjective Well-being and Process Variables and Post-hoc Comparisons

Measure	Baseline				Post				*Wilkins Lambda / Greenhouse–Geisser*	*F*	*Df*	*p*	*η2*
	Pilgrims		Vacation		Pilgrims		Vacation						
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*					
Psychological Distress									.98	3.21	3,444	**.023**	.02
Anxiety and depression	3.22	3.04	2.08	1.98	1.32	2.06	1.15	1.49		3.98		**.047**	.01
Perceived Stress	5.26	3.31	3.94	2.34	4.32	3.03	3.50	2.38		8.30		**.004**	.02
Negative Affect	9.20	3.43	8.97	2.69	6.70	2.00	7.09	2.26		1.55		.338	
Subjective Wellbeing									.97	4.56	3,416	**.004**	.03
Positive Affect	16.20	4.00	16.32	3.74	19.10	3.89	17.31	3.96		12.47		**< .001**	.03
Satisfaction with Life	22.63	7.10	25.68	5.56	24.93	6.51	26.92	4.69		4.28		**.039**	.01
Subjetive Happiness	4.99	1.26	5.46	1.10	5.36	1.15	5.59	0.94		2.14		.144	
Process Variables									.98	2.20	4,401	.068	
Mindfulness	41.30	7.41	44.03	6.48	43.18	7.01	45.20	6.13		1.67		.197	
Nonattachment	4.79	0.95	4.99	0.71	5.00	0.83	5.16	0.61		0.26		.611	
Valued Living	38.46	6.92	40.63	5.17	40.41	6.25	40.52	5.48		8.41		**.004**	.02
Life Fulfilment	20.72	5.16	22.75	3.97	22.76	4.64	23.51	3.99		2.78		.096	

Wilkins Lambda for MANOVA, and Greenhouse–Geisser for ANOVAs. Covariates: Sex, days of experience, Catholic, in a relationship, with employment, and years of education

each psychological distress and perceived well-being. Additionally, we included the baseline values of valued living and psychological distress and perceived well-being, and the correlations between baseline valued living, group, and covariates (i.e., men, Catholics, in a relationship, employed, years of education, and days of experience) as part of the predictive models.

Table 5 shows the bootstrapping analysis results of each model's direct, indirect, and total effects. There was a total mediation of valued living on perceived stress (see Fig. 3b), negative affect (Fig. 3c), life satisfaction (Fig. 3e), and happiness (Fig. 3f) (i.e., the group does not directly predict the outcomes but is mediated by valued living). There was partial mediation of valued living on positive affect, indicating that undertaking the Way of St. James is directly associated with improvements in positive affect (Fig. 3, path d) and indirectly associated through increases in valued living.

5 Discussion

This quantitative study aimed to assess the psychological impact of the Way of St. James pilgrimage on psychological distress and subjective well-being in the short (i.e., just after the pilgrimage) and medium term (3 months after the pilgrimage). In addition, this study compared the effects of the pilgrimage on those individuals with non-pilgrimage holidays and explored potential psychological mediators that may theoretically underpin the therapeutic effects of pilgrimage. At the within-group level (pilgrims), most psychological distress, subjective well-being, and process variables improved from pre- to post-intervention and at 3 month follow-up with small-to-moderate effect sizes. Regarding the pre-post comparison between the pilgrim and vacationer groups, the results indicate greater improvements (small effect sizes) in positive affect, satisfaction with life, valued living, anxiety and depression, and perceived stress scores in the pilgrim group. Valued living emerged as a crucial mediator in the association between pilgrimage with psychological distress and subjective well-being-related variables.

Building on previous studies that suggest a positive impact on mental health and well-being after pilgrimage (Bakhtiari et al., 2017; Kéri, 2023; Morris, 1982; Schnell & Pali, 2013), this study further supports that participating as a pilgrim in the Way of St. James is generally associated with significant improvement in such self-reported outcomes, which persisted for at least 3 months afterwards.

Pilgrims reported lower levels of anxiety, depression, perceived stress, and negative affect, while experiencing higher levels of positive affect, life satisfaction, subjective happiness, mindfulness, nonattachment, and engaged life. These findings are consistent with those of Løvoll and Torrissen (2020), who observed significant improvements in subjective life satisfaction, mental well-being, and personal growth among their participants, both immediately and two weeks after completing their Camino. The same authors suggest that the walking pilgrimage initiates a change process in participants, similar to the changes taking place in liminal rites of passage. Getting away from home, gaining clarity during the pilgrimage, and acquiring motivation and goals serve as both a turning point and a life direction-changing moment (Løvoll & Torrissen, 2020).

The improvements in psychological distress and subjective well-being outcomes were maintained at follow-up, except for positive affect, which exhibited only short-term enhancement and did not persist after three months. One possible explanation for the brief duration of improvements in positive affect is that it may be less malleable and

Table 5 Bootstrapping Direct, Indirect and Total Effects and 95% Confidence Interval (CI) (5000 Bootstrap Samples)

	β	Estimate	Std. Error	z-value	*p*	95% CI	
						Lower	Upper
Direct Effects (c')							
Group → Post Anxiety-Depression	−0.02	−0.14	0.18	−0.8	.448	−0.51	0.19
Group → Post Perceived Stress	0.02	0.12	0.25	0.47	.641	−0.38	0.59
Group → Post Negative Affect	−0.08	−0.45	0.26	−1.75	.080	−0.98	0.04
Group → Post Positive Affect	**0.16*** **	1.74	0.45	3.73	**< .001**	**0.86**	**2.67**
Group → Post Satisfaction with Life	−0.01	−0.18	0.38	−0.47	.639	−0.03	0.58
Group → Post Subjective Happiness	0.01	0.04	0.07	0.61	.543	−0.09	0.19
Indirect Effects (a x b)							
Group → Post Valued Living → Post Anxiety-Depression	-0.01	−0.04	0.03	−1.42	.156	−0.13	0
Group → Post Valued Living → Post Stress	**-0.02***	−0.13	0.06	−2.39	**.017**	**-0.26**	**-0.04**
Group → Post Valued Living → Post Negative Affect	**−0.02***	−0.09	0.04	−2.27	**.023**	**−0.19**	**-0.03**
Group → Post Valued Living → Post Positive Affect	**0.02***	0.20	0.09	2.27	**.023**	**0.06**	**0.41**
Group → Post Valued Living → Post Satisfaction with Life	**0.02***	0.40	0.15	2.71	**.007**	**0.12**	**0.72**
Group → Post Valued Living → Post Subjective Happiness	**0.02***	0.08	0.03	2.58	**.010**	**0.02**	**0.14**
Total Effects (c' + ab)							
Group → Post Anxiety-Depression	−0.03	−0.18	0.19	−0.97	.332	−0.57	0.16
Group → Post Perceived Stress	−0.01	−0.02	0.25	-0.08	.941	−0.53	0.47
Group → Post Negative Affect	**−0.10***	−0.54	0.27	−2.04	**.042**	**−1.09**	**−0.03**
Group → Post Positive Affect	**0.18*** **	1.94	0.48	4.12	**< .001**	**1.06**	**2.91**
Group → Post Satisfaction with Life	0.01	0.23	0.39	0.57	.570	−0.54	1.03
Group → Post Subjective Happiness	0.04	0.12	0.08	1.57	.117	−0.03	0.27

β = Standardized regression coefficient; *$p < .05$; **$p < .005$; ***$p < .001$

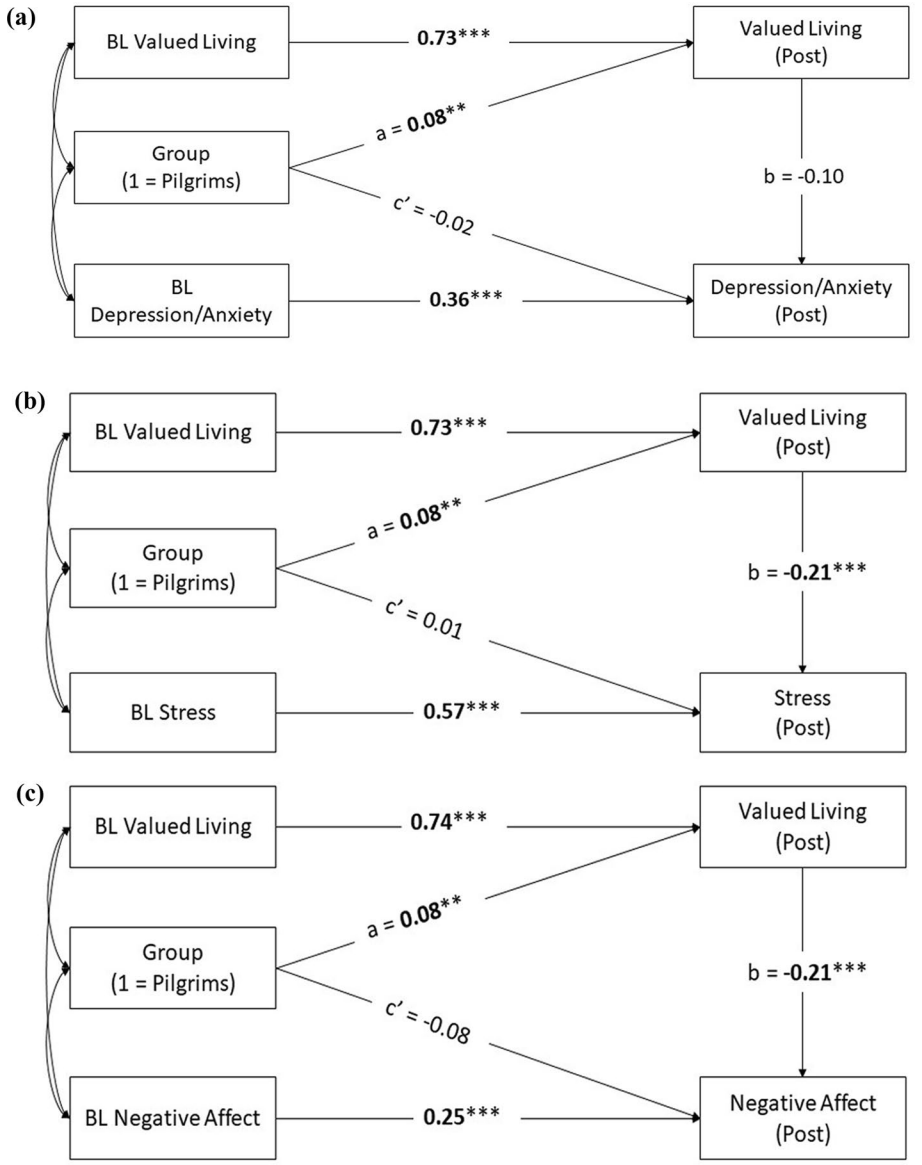

Fig. 3 Graphical representation of direct and indirect effects in the mediational models of St. James' Way vs Vacations. Standardized values. *$p < 0.05$; **$p < 0.005$; ***$p < 0.001$

more resistant to change than negative affect (Haga et al., 2021; Vittengl et al., 2022). Consequently, the positive affect subscale demonstrated a smaller pre-post change compared to the negative affect subscale, potentially making it insufficient to sustain over an extended period, such as three months. Another explanation is that improvements in positive affect may be more closely tied to the social, spiritual, psychological, and physical experiences of the pilgrimage. When individuals return to their routines and lose

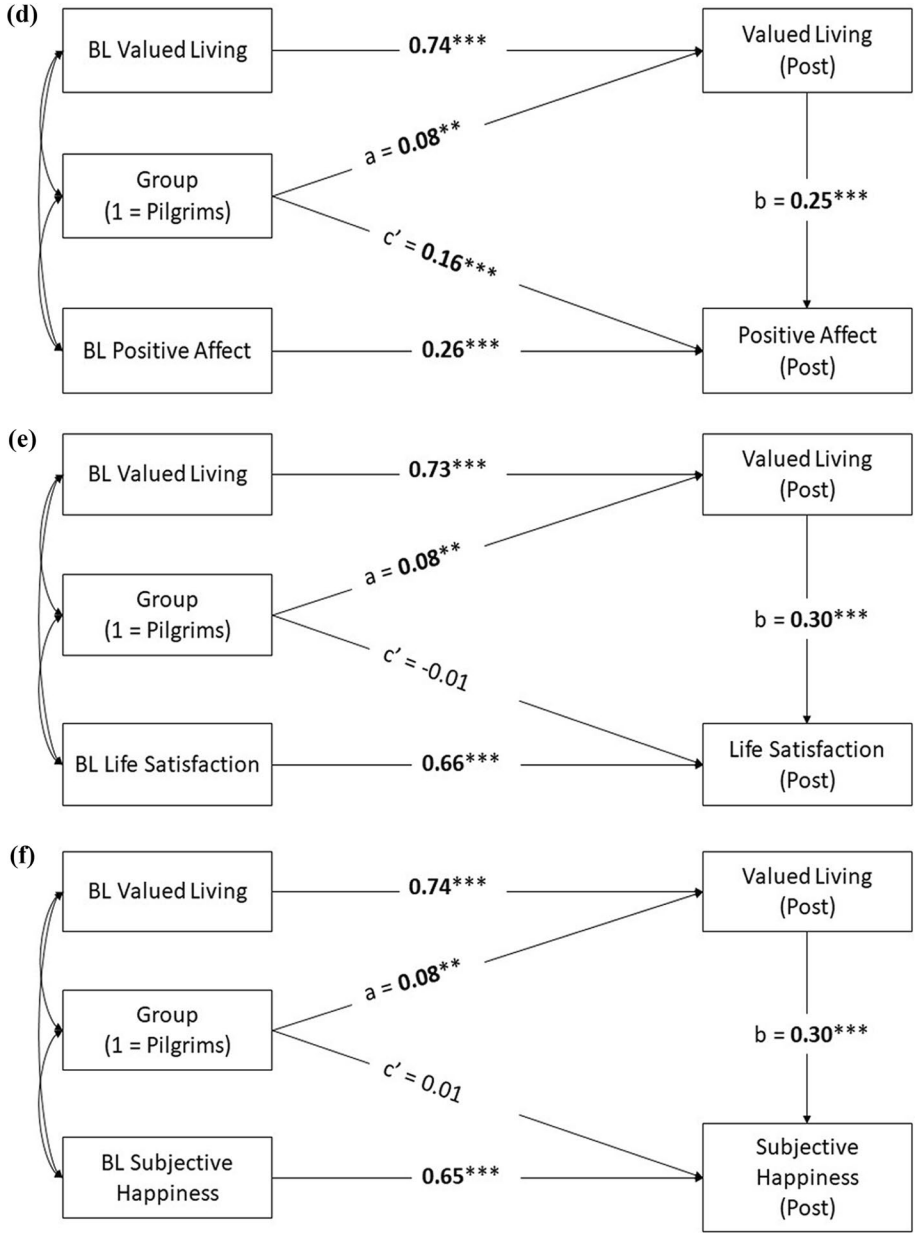

Fig. 3 (continued)

contact with these uplifting experiences, the improvement in positive affect may dissipate more rapidly than improvements in negative emotions. Similarly, a recent study demonstrated that a 10-day nature-based intervention led to an improvement in positive affect in the short term; however, these effects dissipated after three months (Ho et al., 2022a).

As expected and consistent with previous research (De Bloom et al., 2017; Schnell & Pali, 2013), our findings show that both pilgrims and vacationers experience decreased psychological distress and improved subjective well-being following pilgrimage and vacations, respectively. Upon comparing both groups, our results indicate a significant difference in the reduction of anxiety, depression, and perceived stress and the increase in positive affect, satisfaction with life, and valued living, favouring the pilgrim group. However, our results suggest no significant difference between the effects of pilgrimage and vacations on reducing negative affect nor increasing happiness, mindfulness, nonattachment, and life fulfilment. A possible explanation for these results is that using such an active control group, which solidly provides mental health benefits (De Bloom et al., 2017), made finding significant differences more challenging. In other words, our control group can be considered as a *bona fide* comparator. Furthermore, it is noteworthy that participants in the vacationer group rated their holiday experiences as almost excellent, further confirming that this type of control group may be considered a high standard of comparison.

Regarding mediation analysis, valued living emerged as a crucial mediator between pilgrimage and psychological distress (i.e., total mediation for perceived stress) and subjective well-being (i.e., total mediation for satisfaction with life and subjective happiness, and partial mediation for positive affect). This means that being in the pilgrim group, compared to the vacationer group, predicted changes in valued living, which, in turn, predicted a decrease in psychological distress and an increase in subjective well-being. In this regard, after completing the pilgrimage, individuals seemed more capable of recognizing and understanding their values, supporting the assertion that this experience may offer a unique opportunity for reflection, increasing awareness, and personal insight about what matters in life. This self-discovery journey may enhance clarity in personal values and meaning in life (Schnell & Pali, 2013).

Our findings on the critical role of valued living in mediating some of the benefits of pilgrimage also align with previous research, which highlights psychological flexibility's positive association with well-being and life satisfaction (Howell & Demuynck, 2021; Kashdan et al., 2020), and its negative association with anxiety and depressive symptoms (Tunç et al., 2023). Other studies have also reported that pilgrimage is linked to changes in personal values. For example, Brumec (2021) found a change in the personal hierarchy of values following the completion of the Way of St. James, with an increase in openness to change and conservation values after the pilgrimage; similarly, Jørgensen et al. (2020) and Schnell and Pali (2013) reported a clarification of personal values after the Way, suggesting that this may be a core psychological process driving its transformative nature.

It is worth mentioning that valued living is recognized as a core mechanism of change in third-wave cognitive behavioural therapies, particularly Acceptance and Commitment Therapy (Hayes et al., 2006), and is considered a key process to promote in psychotherapy to improve clinical outcomes (Tunç et al., 2023). Our finding that changes in valued living are also necessary for generating some of the psychological benefits of the Way of St. James bridges the gap between psychotherapy and pilgrimage, supporting the idea that pilgrimage could also be seen as a form of green-prescription self-therapy (Jørgensen, 2017).

According to Passmore and Krause (2023), nature is a common source of meaning in people's lives, and connecting with it—through experiences such as pilgrimage—can provide meaning by addressing individuals' needs for coherence, significance, and purpose. Given that valued living and meaning in life are closely intertwined constructs, with research suggesting that reappraising values—such as when adapting to a difficult medical diagnosis—can lead to changes in both meaning in life and quality of life (Carreno et al., 2023), our findings align with studies emphasizing the key role of meaning in life

in mediating the relationship between contact with nature—an inherent component of the Way of St. James—and well-being (Howell et al., 2013).

It is important to note significant differences in baseline and demographic variables between pilgrims and vacationers. These differences suggest that individuals who undergo pilgrimage may have a distinct profile compared to those who prefer "standard" (i.e., non-pilgrimage) holidays. Notably, pilgrims had higher scores for anxiety, depression (i.e., of mild severity according to standard cutoffs; Kroenke et al., 2009), and perceived stress, and lower scores for satisfaction with life, subjective happiness, mindfulness, nonattachment, and engaged living. Additionally, compared to the vacationer sample, pilgrims had fewer years of education and were more likely to be men, Catholic, single, and non-employed. We controlled for these differences in our analysis to minimize their impact on our results. The findings on differential mental health status at baseline between the study samples are consistent with recent studies indicating that many individuals undertake the Way for therapeutic reasons or are motivated by a life crisis (Schnell & Pali, 2013; Sørensen & Høgh-Olesen, 2023).

These findings also align with the motivations reported by the pilgrims in our study. Although almost half of the pilgrim sample cited leisure and pleasure, cultural interest, disconnecting from obligations, or improving physical fitness and health as motivations, personal growth was the primary reason for most participants. Additionally, clarification of personal values and overcoming challenging individual circumstances were identified as the main reasons for undertaking the pilgrimage (33% and 22% of the sample, respectively). These findings suggest that a vast majority of the pilgrim sample felt a need for personal change, which probably influenced their decision to start the Way of St. James. In line with Frank's perspective (1961), this motivational profile indicates that pilgrims were already inclined toward making a change before starting the pilgrimage. This pre-existing motivation, which clearly contrasts with the motivational profile of the vacationer sample (e.g., less than 10% of the vacationer sample cited personal growth as a motivation for their vacations) may also help explain part of the observed healing effects after the pilgrimage. Motivation is central in life and governs most psychological processes and has a central importance for the change of experience and behaviour and also has a clear role in promoting therapeutic change in the context of psychotherapy (Holtforth & Michalak, 2012). It is also worth mentioning that religious motivations were among the least cited reasons for pilgrims to undertake the Way, with less than 15% of the sample mentioning them. This finding aligns with reports suggesting that modern pilgrimages are no longer solely defined by religious motivations such as self-sacrifice, piety, or devotion. Instead, they are mainly driven by intrinsic motivations based on inner needs and desires (Amaro et al., 2018; Brumec et al., 2023; Kurrat, 2019; Ryan & Deci, 2000), as we mentioned earlier.

The profile of the pilgrim sample in our study is diverse, encompassing individuals who walked for as few as four days and were motivated by reasons beyond religiosity, such as personal growth. The fact that benefits were observed after a relatively short pilgrimage duration (10 days on average), compared to other studies that included participants with more extended periods of pilgrimage (e.g., more than 20 days; (Brumec, 2021; Brumec et al., 2023) enhances the applicability of our results to the general population, which typically cannot afford extended vacation periods. It is also worth mentioning that the pilgrim sample in the present study exhibited mild depressive and anxious symptoms, suggesting that the pilgrimage on the Way may also serve as a potential tool for health promotion and prevention, even in some at-risk populations. Altogether, this study provides further evidence of the therapeutic potential of pilgrimage for a broad segment of the general population, with beneficial effects that seem to extend beyond those of standard vacations. This

supports the recommendation to promote such experiences as an even healthier alternative to traditional tourist destinations.

5.1 Strengths, Limitations, and Future Directions

Despite the potential contribution of this study to the existing literature, several limitations must be acknowledged. First, the quasi-experimental design of this study impedes a true cause-effect evaluation. Furthermore, the control group did not include a three-month follow-up, which limits the conclusions regarding the stability of the changes and the long-term effects of the pilgrimage compared to standard vacations.

Second, due to the online format of the study, there is a potential influence of self-selection bias and issues with sample representativeness. Additionally, individuals who remained in the study until the end differed slightly from those who dropped out, so self-selection bias cannot be ruled out. The sample sizes of the study groups were also unbalanced. This difference may lead to reduced statistical power and potentially biased estimates in the analyses, as the smaller control group may not adequately represent the vacationer population. Future studies should address this limitation by increasing the sample size of control groups and achieving a better balance between groups.

Third, although demographic and baseline outcome variables were used as covariates in the analyses, the control group (i.e., vacationers) was not entirely comparable to the pilgrimage group. Further studies with larger samples and adequate representation of all potential covariate categories will enable the development of more complex analytical models, allowing for better control of differences between groups. In this regard, it is important to consider other potential confounding variables that may influence psychological distress outcomes, such as participants' prior mental health status or concurrent life events. Failing to account for these variables limits the ability to attribute observed changes solely to the pilgrimage experience.

Future research should also explore alternative control groups that share more motivational aspects with the pilgrimage, such as the pursuit of personal change, which was underrepresented in the vacationer group. In this regard, control groups might include other pilgrimage destinations (e.g., Lourdes), non-pilgrimage long walks (such as the GR-11 trail crossing the Pyrenees from the Atlantic to the Mediterranean), or even meditation retreats. These studies should also consider more rigorous designs, such as randomized clinical trials, to better explore causality and the therapeutic effect of the Way on specific vulnerable samples (e.g., mild depression). Finally, the mediation analyses were exploratory. Future studies should test these findings using a three-wave longitudinal design or intensive assessments, such as ecological momentary assessments, to provide more robust conclusions about mediation and causality. Additionally, it would also be interesting to include other potential mediators related to the experience of the pilgrimage, such as the effect of social contact and belonging to a group, connection with nature, or moderate physical exercise practice (Jørgensen et al., 2020).

6 Conclusions

In recent years, there has been a renewed interest in the Way of St. James pilgrimage, driven not only by religious reasons but also by secular motivations such as personal growth and values clarification. The pilgrimage incorporates several elements that can

promote mental health and well-being, including spending time in nature, engaging in physical exercise, having a sense of purpose, belonging to a group, having time for introspection, and connecting with the present moment and one's personal values. However, despite being a potentially therapeutic experience undertaken by hundreds of thousands of people each year, research on the psychological therapeutic effects of the Way is relatively sparse, particularly when considering the use of quantitative approaches with comprehensive and validated measures in large samples.

Our findings suggest that embarking on a pilgrimage along the Way of St. James is positively associated with reductions in psychological distress and increases in subjective well-being, particularly in the short term. These improvements were maintained at a 3-month follow-up, except for positive affect. Compared to vacations, pilgrims showed significantly greater short-term improvements in measures of psychological distress, subjective well-being, and valued living.

A particularly relevant aspect found in the present study is that part of the observed benefits could be explained by improvements in valued living during the pilgrimage. This suggests that the pilgrimage may help individuals recognize and understand their personal values and act upon them, leading to reduced psychological distress and enhanced subjective well-being. These results are encouraging and highlight the potential role of the Way of St. James in complementing mental health promotion and illness prevention strategies.

Future research should focus on including clinical and/or vulnerable populations, using randomized and controlled designs, with follow-up assessments and different types of control groups to further investigate the impact of pilgrimage on mental health and well-being.

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