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Article

Spirituality and Death Anxiety: A Comparative Study on State Anxiety, Post-Traumatic Development, Unconditional Self-Acceptance, Life's Purpose and Psychological Well-Being in People Diagnosed with Cancer, Survivors of a Life-Threatening Event, and Terminally Ill Cancer Patients

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Abstract: Objective: This study aims to examine the effect of time on psychological variables such as anxiety as a state, posttraumatic development, unconditional acceptance of oneself, psychological well-being and a dimension thereof, namely the purpose and meaning of life in the case of oncological patients upon diagnosis and in the terminal phase of the disease. We also aimed to study the differences in terms of the same psychological variables between oncological patients in the terminal stage of the disease and those who have faced a life-threatening experience, just as we wanted to establish whether spiritual experiences (NDEs/DBVsS/ELEs) mainly characterize a certain group among the three evaluated. Methods: A community sample of 309 participants, 103 subjects in each category, of which 181 males (58,6%) and 128 females (41,4%), with ages between 19-76 years. The 103 participants with a cancer diagnosis who reached the terminal phase of the disease after 3 years were 68 males (66%) and 35 females (34%) aged between 31-76 years, and the 103 participants recovering from life-threatening events were 45 males (43.7%), 58 females (56.3%) aged between 19-59 years, the study being conducted between January 2022-January 2025. The instruments were: *Posttraumatic Development Scale – SGRS, State Anxiety – Trait Inventory (STAI), USAQ Scale, Ryff's Psychological Well-Being Scale (PWB-R).* Results: The results showed significant differences between oncology patients at diagnosis and in the terminal phase, indicating a significant effect of time on state anxiety $F(1; 102) = 1290.33$, $p = .000$, $\eta^2 = .92$, unconditional self-acceptance $F(1; 102) = 749.58$, $p = .000$, $\eta^2 = .88$, posttraumatic development $F(1; 102) = 1618.86$, $p = .000$, $\eta^2 = .94$, psychological well-being $F(1; 102) = 86.72$, $p = .000$, $\eta^2 = .46$, purpose and meaning in life $F(1; 102) = 1092.05$, $p = .000$, $\eta^2 = .91$.

Keywords: transdiagnostic anxiety; spirituality; state-anxiety; posttraumatic development; unconditional acceptance of oneself; psychological well-being; the purpose and meaning of life

1. Introduction

Many existentialist psychotherapists have long maintained the need to confront death in order for people to live meaningful lives (Frankl, 2017). Cognitive-behavioral approaches suggest that exposure to death cognitions can positively influence existential anxiety, reducing the psychopathology in which death anxiety is implicated which represents a strong approach in the adaptation process of individuals, nowadays, when the environment is very demanding and the coping mechanisms fail. Anxiety about death is not just an isolated fear, but a psychological phenomenon that crosses multiple different disorders including generalized anxiety disorder, social

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phobias, obsessive-compulsive disorder, post-traumatic stress disorder (PTSD) and also somatic disorders, leading to its consideration as a transdiagnostic (Kastenbaum, 2018). Similarly, spirituality is defined as a person's sense of oneness with the transcendent dimension of existence that gives meaning to the purpose of existence, and the multidimensional concept of spiritual well-being, which refers to faith, purpose of life, and peace of mind, influences the quality of life of terminally ill patients in the sense that it is associated with reduced levels of depression and anxiety about death (Bovero et al., 2019). Spirituality and the process of transcending the ego are deeply connected with the experience of awe, and are essential for increasing consciousness and fostering authentic humility (Keltner & Haidt, 2003). Living also in the present moment through continuous awareness of the current moment, represents another important aspect in eliminating ego-related illusions and integrating a broader perspective on existence, opening in this way a path to a state of unity and deep authenticity (Emmons & McCullough, 2003). There are also studies which show that psychedelics often make people feel as if they are becoming one with everything and that this is the central point with mystical experience (Barett et al., 2015). People who use psychedelics to induce a mystical experience show increased religiosity and also claim encounters with God, facts related to the profound experiences of interconnectedness which facilitates the ego dissolution and a sense of transcendence, which also lead to the challenging notion that physical death is not the final phase of existence (Griffiths et al., 2016).–Additionally, studies have found similarities between psychedelic experiences and non-ordinary forms of consciousness experienced in meditation and near-death experiences (Carhart-Harris & Goodwin, 2017). Therefore, man manifests the desire to penetrate existence at a deeper level defined by other aspects that are not necessarily related to material existence, to the perishable aspects of life, and indeed anxiety in the face of death is a serious medical problem that is associated with other mental disorders, a fact that also represented the motivation for conducting this study, out of the desire to better describe the psychological reality of people who are confronted with the idea of death in different circumstances. High levels of spirituality have the role of significantly reducing anxiety about death, creating a much more adapted and satisfying existential meaning (Wink & Scott, 2005) aspects that led us to conduct this study.

Deathbed visions (DBVs) refer to vivid near-death experiences or visions that individuals often report as having shortly, before passing away, and these visions are described as deeply emotional and spiritually meaningful, where individuals may encounter deceased relatives, religious figures, or other transcendent beings, and such visions are often described as providing comfort and a sense of peace to the dying individuals (Fenwick & Fenwick, 2008). Claxton-Oldfield (2022) in a study related to deathbed visions (DBVs), argue that this phenomenon cannot be easily explained, but usually has a positive effect on the dying person, which leads to a decrease in fear of death, therefore, although sometimes from a theoretical and scientific perspective certain phenomena are difficult to understand, describe, present, nevertheless they happen and have quantifiable effects from a psychological perspective. The end-of-life experiences (ELEs) is a term used for those situations that are spiritual or transcendent in and around the process of dying, and generally these experiences may include DBVs (deathbed visions) or TLs (terminal lucidity) or other phenomena such as life reviews, feelings of peace, and encounters with divine entities. Near-Death Experiences refer to vivid and transformative experience that individuals have when they are in a life-threatening situation (NDEs) and include sensations of floating above the body, encounters with deceased loved ones and feelings like peace, love and detachment from pain. The main difference between NDEs and ELEs is that subjects who have NDEs recover and have a life characterized by a high psychological state of well-being, but also by an increased resilience in the face of difficulties, while those who have ELEs actually die.

Although there are all these essential aspects of spirituality around the idea of death, nevertheless one of the greatest fears is precisely that of death, generating even anxiety about death. According to Yalom (2008), the fear of death can significantly impact a person’s mental and emotional state, often leading individuals to attempt to avoid or deny their mortality. Studies suggest that integrating spirituality into one’s life can reduce significantly death anxiety. Individuals who develop

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a sense of peace with their mortality through spiritual practices are better able to manage their fear of death (Wong & Tomer, 2011). Moreover, by finding meaning and significance of life, through enhanced self-awareness -adopting an observer's perspective- can significantly alleviate anxiety, depression and stress. This approach aligns with mindfulness practices that encourage individuals to observe their thoughts and emotions without judgment, fostering a deeper understanding of their internal experiences, developing a non-judgmental awareness of the present moment, so in this way people can better detach from automatic negative thought patterns reducing emotional distress. Studies concluded that mindfulness brings about positive psychological effects as subjective well-being and reduced emotional reactivity (Hofmann et al., 2010). Recognizing death anxiety as a transdiagnostic construct - affecting multiple mental health disorders highlights its pervasive impact on psychological well-being, as different authors show that death anxiety predicts the symptom severity of at least 15 different disorders including anxiety-related, depressive, trauma related, and addictive disorders (Menzies et al., 2019). Integrating an understanding of death anxiety into therapeutic practices enables individuals to confront and process their existential fears leading to reduced anxiety levels. This integration fosters a more profound acceptance of life's impermanence, contributing to emotional stability and resilience. So, we may say that in order for people to flourish they have to face fear of death, aspects that are quite difficult to achieve, but those who invest time and energy in the spiritual dimension of existence manage to eliminate this fear and enjoy the present moment.

Equally, death anxiety is important to be studied in order to observe some other improvements in mental health conditions.

Spiritual experiences are common in those close to death and in the case of those who have gone through a life-threatening situation, but nevertheless death anxiety is a psychological characteristic of many people. The specialized literature presents extensive analyses of these situations, although most studies are descriptive and observational, therefore we wanted to see to what extent certain psychological variables change around critical or final life situations such as the situation when the person receives a cancer diagnosis, the situation when they live a life-limiting experience, and the situation when the person is in the terminal stage of the disease, namely cancer. Thus, we wanted to establish differences between subjects depending on the situations presented previously in terms of anxiety as a state, unconditional acceptance of one's own person, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life.

The present study is a longitudinal study, because we aim to evaluate oncology patients in terms of psychological variables upon diagnosis and after 3 years, in the terminal phase of the disease, and to establish whether there are certain changes under the influence of time, and partially, it is also a cross-sectional study because we aim to evaluate and compare the group of people who have had a life-threatening experience with oncology patients in the diagnostic phase. Anxiety as a state refers to a transient reaction of restlessness and tension, which occurs in response to events considered to be a threat or that are stressful (Bogels et al., 2019). Unconditional acceptance refers to the ability to embrace one's strenghts and flaws without judgment and external validation (Neff, 2003). Posttraumatic growth is a positive psychological process that can occur as a result of a traumatic event, in which individuals come to experience positive changes such as appreciation of life and improvement in interpersonal relationships (Carver et al., 2020). Well-being reffers to the overall quality of life which includes not only happiness and satisfaction, but also the realisation of one's potential, fulfiling relationships, and a sense of purpose in life (Ryff & Singer, 2008), a clear meaning and objective, which determines resilience in the face of adversity (Izgu et al., 2024).

The hypotheses we started from were that there are statistically significant differences between patients upon receiving the cancer diagnosis (Time 1) and in the terminal phase of the disease (after three years-Time 2) in terms of anxiety as a state, unconditional acceptance of one's own person, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and clarity of life.

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The second hypothesis was that there are significant differences between patients who have had a life-threatening experience and oncology patients in the diagnostic phase in terms of anxiety as a state, unconditional acceptance of oneself, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life.

The last hypothesis of the study claims that there is a significant association between belonging to a group (patients in the initial phase, life-threatening survivors patients and patients in the terminal phase of the disease) and the presence of spiritual experiences NDEs/DBVs/ELEs. The choice of the measured variables was determined by the fact that in the specialized literature we did not find studies that evaluated precisely these psychological variables and in this way, we considered that the design of the present study is one with a high level of novelty and can bring more clarity in this area of interest.

2. Materials and Methods

2.1. Study Design:

The research was carried out in several stages, in the sense that, first, we identified patients who had received a cancer diagnosis, then we followed these cases for a period of three years, and later we selected a group of subjects who were recovering from life-threatening events. We carried out the initial assessment of the cancer patients, then, after three years, we carried out the final assessment, and throughout this period we also assessed patients who had survived life-threatening events.

2.2. Setting:

Participants were selected with the help of a local County Hospital, which first of all allowed access to a very large initial number of patients diagnosed with cancer, this being the initial phase, and who wanted to be cured by following each treatment regimen pro-posed by the doctors, the initial evaluation being carried out on a number of 649 people, of whom during the three years only 103 people reached the terminal phase of the disease. In parallel with these steps, we also carried out the evaluations of the 103 participants who are part of the sample of survivors of an experience that threatened their lives. The study was carried out between January 2022 and January 2025.

2.3. Participants

Our data reflects a community sample of 309 participants in this study, of which 181 males (58.6%) and 128 females (41.4%), with ages between 19-76 years, their sampling being stratified, in the initial phase a number of 649 people who received a cancer diagnosis (breast, colon, lung, skin, brain cancer), whom we kept under observation through hospital doctors, and after 3 years, of these, we selected 103 taking into account the fact that these 103 were in the final stage of the disease. In parallel, we evaluated 103 individuals who had experienced severe life-threatening events (car accidents followed by coma, cardiorespiratory arrest, stroke). The 103 participants with a cancer diagnosis who were still in the terminal phase of the disease after 3 years were 68 males (66%) and 35 females (34%) aged 31-76 years, and the 103 participants recovering from life-threatening events were 45 males (43.7%), 58 females (56.3%) aged 19-59 years. Another criterion in the selection of cohorts was the availability of patients.

2.4. Variables and Data Sources:

To assess posttraumatic development, we used the *Posttraumatic Development Scale - SGRS*. The scale includes 15 items formulated as statements that target personal development following a stressful event. The items can be rated on a three-point Likert scale, where 0 means "strongly disagree with the statement" and 2 means "strongly agree with the statement". The scale is administered to people who have experienced high-intensity negative events. Based on the instructions, they are asked to rate their development from 0 (minimum) to 2 (maximum). The internal consistency

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(Cronbach) of the original scale is .96. The internal consistency on the Romanian version of the scale (Cronbach) has the value of .85. To determine the level of anxiety, we used: *State-Trait Anxiety Inventory - STAI*.

The *STAI* consists of 2 self-rating scales to measure two distinct concepts of anxiety. State anxiety (A-state) and trait anxiety (A-trait).

In the present study, we used the (A-state) scale, which also consists of 20 descriptions, but the instructions ask subjects to indicate how they feel at a given moment.

Subjects respond to each item of the *STAI*, rating themselves on a 4-point scale. The four categories for the A-state scale are: 1) not at all, 2) a little, 3) quite a bit, 4) a lot. The A-state scale is balanced with 10 directly rated items and 10 reverse rated items. Internal consistency indices ranged from 0.86 to 0.95. Also, the instrument obtained good psychometric properties in terms of types of validity, these being due to the simplicity of the item formulation, the intelligibility of the instructions and the good discrimination of anxious feelings from depressive feelings (Pitariu & Peleașă, 2007)

To measure unconditional acceptance of oneself, others and life situations, we used the *USAQ Scale* (Chamberlain & Haaga, 2001a). The questionnaire includes 20 items that measure unconditional acceptance of oneself. The items reflect different aspects of this multifaceted concept, central to rational-emotive and behavioral theory.

The scale allows the calculation of a global score, where the values also reflect increased levels of unconditional acceptance of oneself. The *USAQ* includes 20 items, of which 9 items are formulated in such a way that they reflect increased levels of unconditional acceptance of oneself, and 11 items are formulated in such a way that they reflect low un-conditional acceptance.

The response possibilities for each item range from "Almost always false" to "Almost always true".

To measure well-being, we used *Ryff's Psychological Well-Being Scale (PWB-R)* (Ryff & Singer, 2008). The test has 42 items, with a total score of wellbeing and 6 scales: autonomy, control of situations and life, personal development, positive interpersonal relationships, clarity of goal/meaning of life, and self-acceptance. We used the general score of well-being but also the clarity of goal/meaning of life score. Participants answer on a 7-points scale (1 = strongly agree, 7 = strongly disagree). Internal consistency score was .86.

The method of evaluating spiritual experiences such as NDEs/DBVs/ELEs through YES/NO questions was chosen primarily due to its simplicity, but also its efficiency in an exploratory study, and allowed us to collect data quickly and clearly, wanting a general evaluation of the reported phenomena, without going into individual details specific to each case, thus all evaluated subjects answered whether or not they had faced certain transcendental experiences (Reich, 2005).

2.5. Bias:

Informed consent was obtained from all the participant students with an online form. Common ethical practices in research with human subjects were followed. The study was approved by the Ethics Committee of the university with which the investigators are associated. All the questionnaires were paper form applied by the researchers, carefully following the full completion.

In the screening part, in order to control the variables investigated, we numbered each questionnaire. The application of the questionnaires was done by the authors according to certain variables designated prior to testing. Also, since the application phase of the questionnaires, we have taken into account that there is no missing data when filling in the instruments.

2.6. Study Size:

Being the subject selection and based on availability, but also the fact that we tried to fully control the data collection, so that there were no missing data and equally so that we also had access to the selected subjects throughout the study, in this way the final total number of participants was the one previously mentioned in the paper.

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2.7. Quantitative Variables:

To measure the studied variables, we chose instruments that have good fidelity with regard to the Romanian population, these aspects being mentioned previously.

2.8. Statistical Methods:

The research design is based on an ANOVA RM, meaning that to verify the first hypothesis, which aims to determine the effect of time on the group of patients (upon diagnosis and in the terminal phase of the disease) we used ANOVA with Repeated Measures, and to verify the second hypothesis we used the Student's T-Test for independent samples to compare the results obtained by oncology patients in the diagnostic phase with the results of subjects who had a life-threatening experience. Last but not least, we used the χ^2 test to see to what extent the presence of spiritual experiences is associated with belonging to a certain group (oncology patients-diagnosis phase, oncology patients-final phase and patients with a life-threatening experience).

3. Results

To determine to what extent there are differences in terms of state anxiety, unconditional self-acceptance, posttraumatic development, psychological well-being, and purpose and meaning in life, under the influence of time between oncology patients in the diagnostic phase (Time 1) and oncology patients in the terminal phase of the disease (Time 2), we used RM ANOVA.

In this sense, the descriptive analysis showed us that in the case of state anxiety upon receiving the cancer diagnosis (M = 58.75, SD = 6.85), after the life-incompatible event (M = 39.76, SD = 5.52), and in the final phase of the disease (M = 28.26, SD = 4.66), in the case of unconditional acceptance of oneself upon receiving the cancer diagnosis (M = 74.89, SD = 4.85), after the life-incompatible event (M = 97.93, SD = 8.34), and in the final phase of the disease (M = 105.91, SD = 9.69), in the case of posttraumatic development upon receiving the cancer diagnosis (M = 10.67, SD = 2.05), after the life-incompatible event (M = 22.50, SD = 2.10), and in the final phase of the disease (M = 21.13, SD = 1.55), in the case of psychological well-being of the person upon receiving the cancer diagnosis (M = 49.34, SD = 2.29), after the event incompatible with life (M = 58.37, SD = 4.20), and in the final phase of the disease (M = 51.61, SD = 1.86), in the case of the purpose and meaning of life upon receiving the cancer diagnosis (M = 16.33, SD = 2.91), after the event incompatible with life (M = 24.36, SD = 2.87), in the final phase of the disease (M = 27.11, SD = 2.04), (*Skewness* and *Kurtosis* between ± 1-3) (*Table 1*).

H1: There are statistically significant differences between patients at the time of receiving the cancer diagnosis (Time 1) and in the terminal phase of the disease (after three years-Time 2) in terms of anxiety as a state, unconditional acceptance of oneself, posttraumatic development, general psychological well-being, but also an essential component of it such as the purpose and clarity of life. To verify the hypothesis, we used an ANOVA RM analysis, and in the case of anxiety as a state, the Mauchly test was used to verify sphericity, sphericity could not be calculated, being only two time points, this not being a problem, $\eta^2(0) = 0.00$, we used ANOVA without corrections, indicating a significant effect of time on anxiety as a state $F(1; 102) = 1290.33$, $p = .000$, $\eta^2 = .92$. Comparing the means, state anxiety was significantly higher at Time 1 than at Time 2, $p = .000$, for unconditional self-acceptance $F(1; 102) = 749.58$, $p = .000$, $\eta^2 = .88$. Comparing means, unconditional self-acceptance was significantly higher at Time 2 than at Time 1, $p = .000$, for posttraumatic development $F(1; 102) = 1618.86$, $p = .000$, $\eta^2 = .94$, and comparing *means*, posttraumatic development is significantly higher at Time 2 than at Time 1, $p = .000$, regarding psychological well-being $F(1; 102) = 86.72$, $p = .000$, $\eta^2 = .46$, and comparing means, psychological well-being was significantly higher at Time 2 than at Time 1, $p = .000$, and in the case of purpose and clarity of life $F(1; 102) = 1092.05$, $p = .000$, $\eta^2 = .91$, and comparing the means, the purpose and clarity of life was significantly higher at Time 2 than at Time 1, $p = .000$ *(Table 2)*.

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Table 1. Mean, Standard deviation, Skewness and Kurtosis.

		N	*Mean*	*Std. Deviation*	*Skewness*		*Kurtosis*	
		Statistic	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Diagnosis phase	state anxiety	103	58.7573	6.85203	.502	.238	-.655	.472
	posttraumatic development	103	10.6796	2.05900	-.094	.238	-.661	.472
	unconditional acceptance	103	74.8932	4.85054	.259	.238	-1.207	.472
	wellbeing	103	49.3495	2.29965	-.636	.238	-.632	.472
	purpose meaning of life	103	16.3301	2.91846	-.317	.238	-.580	.472
Terminal phase								
	state anxiety	103	28.2621	4.66518	.811	.238	.274	.472
	posttraumatic development	103	21.1359	1.55959	.197	.238	-1.104	.472
	unconditional acceptance	103	105.9126	9.69749	-.162	.238	-1.738	.472
	wellbeing	103	51.6117	1.86943	1.052	.238	.300	.472
	purpose meaning of life	103	27.1165	2.04987	-.049	.238	.518	.472
Threatening life experiences								
	state anxiety	103	39.7670	5.52393	.230	.238	-.036	.472
	posttraumatic development	103	22.5049	2.10915	-.160	.238	-.859	.472
	unconditional acceptance	103	97.9320	8.34579	.596	.238	-.649	.472
	wellbeing	103	58.3786	4.20811	.516	.238	-.943	.472
	purpose meaning of life	103	24.3689	2.87310	.375	.238	-1.364	.472
	Valid N (listwise)	103	22.5049	2.10915	-.160	.238	-.859	.472

Table 2. Tests of Within-Subjects Effects(Anova RM).

Effect						
Time(diagnostic phase vs.final phase)	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	η^2	*Cohen's d*
anxiety as a state	47892.626	1	47892.626	1290.33	.927	5.20
unconditional acceptance	49553.519	1	49553.519	749.588	.880	4,13

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posttraumatic development	5630.723	1	5630.723	1618.860	.941	5,61
wellbeing	263.539	1	263.539	86.724	.460	1,09
purpose and meaning of life	5991.850	1	5991.850	1092.054	.915	4,11

Cancer patients often experience significant anxiety upon diagnosis due to uncertainties about disease progression, treatment challenges and fear of the unknown, as well as reduced level of unconditional acceptance of one's own person which also implies the non-acceptance of the life situation which is associated with difficulties in adapting to the disease and experiencing a high level of emotional distress (Chamberlain & Haaga, 2001b), but during the confrontation with the disease this aspect changes, since spiritual experiences play an essential role in the lives of oncological patients, according to the National Cancer Institute (2023).

H2: There are significant differences between patients who have had a life-threatening experience and oncology patients in the diagnostic phase in terms of anxiety as a state, unconditional acceptance of oneself, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life. To verify the hypothesis, we used the Student's T-Test for independent samples, resulting in the fact that in the case of state anxiety in oncology patients (M = 58.75, SD = 6.85), in patients with a life-threatening experience (M = 39.76, SD = 5.52), the results indicating a significant difference between groups $F(1; 204) = 5.37$, $p = .021$, $t(196.79) = 22.26$, $d = 3.11$, which suggests that oncology patients reported a higher level of state anxiety compared to people who had a life-threatening experience, the results indicating very large effects. Regarding unconditional acceptance of oneself in oncology patients (M = 74.89, SD = 4.85), after the life-incompatible event (M = 97.93, SD = 8.34), the results indicating a significant difference between groups $F(1; 204) = 18.33$, $p = .000$, $t(167.66) = -24.30$, $d = 3.39$, which suggests that oncology patients reported a lower level of unconditional acceptance compared to those who had a life-threatening experience, in the case of posttraumatic development upon receiving the cancer diagnosis (M = 10.67, SD = 2.05), after the life-incompatible event (M = 22.50, SD = 2.10), $F(1; 204) = .26$, $p = .61$, $t(204) = -41.20$, $d = 5.77$, in the case of psychological well-being of the person upon receiving the cancer diagnosis (M = 49.34, SD = 2.29), after the life-incompatible event (M = 58.37, SD = 4.20), $F(1; 204) = 42.56$, $p = .000$, $t(167.07) = -19.37$, $d = 2.71$, and in the case of the purpose and meaning of life upon receiving the cancer diagnosis (M = 16.33, SD = 2.91), after the life-incompatible event (M = 24.36, SD = 2.87), $F(1; 204) = .084$, $p = .77$, $t(204) = -19.94$, $d = -2.78$ (Table 3).

Therefore, the results of the effects of the differences between oncology patients and those with a life-threatening experience are large and very large suggesting that oncology patients show a higher level of state anxiety but also a lower level of unconditional acceptance, post-traumatic development, psychological well-being and purpose and meaning in life. In this way, hypothesis 2 is confirmed. Studies suggest that patients who have gone through a life-threatening experience show lower anxiety towards death and greater acceptance of their own mortality (Greyson, 1984). Near-death experiences are often associated with profound changes in perspective on life, increased psychological well-being and positive post-traumatic development (Greyson, 1984). Often, patients with a life-threatening experience frequently report intense spiritual experiences which contribute significantly to the reduction of anxiety towards death and the discovery of a deep meaning in life (Carter, 2010).

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Table 3. Independent T-Test for patients in the initial phase and those who had a life threatening experience.

	Levene's Test for Equality of Variances		*t-test for Equality of Means*							
								95% Confidence Interval of the Difference		
	F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*Lower*	*Upper*	*Cohen's d*
State anxiety	5.379	.021	22.266	196.798	.000	19.05825	.85595	17.37024	20.74627	3.11
Posttraumatic development	.261	.610	-41.201	204	.000	-11.88350	.28842	-12.45217	-11.31482	5.77
Unconditional acceptance	18.331	.000	-24.306	167.666	.000	-23.34951	.96066	-25.24606	-21.45297	3.39
Wellbeing	42.564	.000	-19.373	167.072	.000	-9.36893	.48362	-10.32372	-8.41414	2.71
Purpose and meaning of life	.084	.772	-19.944	204	.000	-8.10680	.40648	-8.90825	-7.30535	-2.78

H3: The last hypothesis of the study claims that there is a significant association between group membership (patients in the initial phase, life-threatening experience patients and patients in the terminal phase of the disease) and the presence of spiritual experiences NDEs/DBVs/ELEs. A χ^2 test was performed to analyze the association between the type of group and spiritual experiences, the results indicating a significant association between the variables, $\chi^2(2, N = 309) = 135.53$, $p < 0.001$, Cramer's V coefficient = 0.66, which suggests a strong association between these variables, the results also suggesting that the the patients in the terminal phase had the highest number of spiritual experiences, followeb by those with a life-threatening experience, and those in the diagnostic phase of the disease (*Table 4*).

The hypothesis was confirmed. Studies show that spiritual well-being in people at the end of life offers protection against despair and the desire for a hasty death, just as the spiritual concerns of oncological patients attest to the fact that the spiritual dimension of existence must be taken into account primarily in the palliative care process (Pargament, 2007).

Table 4. Chi-Square test.

		With/without ndes dbvs eles						
							Asymptotic	
		with	*without*	*Total*	Pearson χ^2	*df*	*Significance*	*Cramer's V*
initial phase	Count	15	88	103				

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	Expected Count	59.0	44.0	103.0	135.535	2	.000	.66
	% within type_group	14.6%	85.4%	100.0%				
final phase	Count	97	6	103				
	Expected Count	59.0	44.0	103.0				
	% within type_group	94.2%	5.8%	100.0%				
life threatening experiences	Count	65	38	103				
	Expected Count	59.0	44.0	103.0				
	% within type_group	63.1%	36.9%	100.0%				
Total	Count	177	132	309				
	Expected Count	177.0	132.0	309.0				
	% within type_group	57.3%	42.7%	100.0%				

4. Discussion

The present study primarily aims to conduct a longitudinal evaluation of oncology patients in the diagnostic phase, and subsequently three years later when they reach the final phase of the disease, in order to determine to what extent confronting the idea of death, but also with a difficult diagnosis, can lead to changes in terms of anxiety as a state, unconditional acceptance of oneself, post-traumatic development, psychological well-being, but also a sub-dimension thereof such as the purpose and meaning of life. Following the analysis of the results, the research hypothesis was confirmed, as we obtained significant differences between oncological patients under the influence of time, in the case of anxiety as a state $F(1; 102) = 1290.33$, $p = .000$, $\eta^2 = .92$, this being significantly higher at Time 1 than at Time 2, $p = .000$, for unconditional acceptance of oneself $F(1; 102) = 749.58$, $p = .000$, $\eta^2 = .88$, unconditional acceptance of oneself was significantly higher at Time 2 than at Time 1, $p = .000$, for post-traumatic development $F(1; 102) = 1618.86$, $p = .000$, $\eta^2 = .94$, this being higher at Time 2 than at Time 1, $p = .000$, in terms of psychological well-being $F(1; 102) = 86.72$, $p = .000$, $\eta^2 = .46$, being higher at Time 2 than at Time 1, $p = .000$, and in the case of purpose and clarity of life $F(1; 102) = 1092.05$, $p = .000$, $\eta^2 = .91$, being significantly higher at Time 2 than at Time 1, $p = .000$. We can state that as cancer patients approach the end of life, there is an increase in spiritual awareness and a need for spiritual care, all of which is possible due to spiritual experiences. In the context of cancer diagnosis and a possible death, there is an increase in spiritual experiences, an aspect that we have already highlighted in the present study, which allows these people to cope with the fear of death (Pargament, 2007). Therefore, we could consider that spiritual and religious experiences reduce anxiety in the face of death, which is also associated with other psychological disorders, which is precisely why the development of awareness programs and the spiritual dimension of existence are necessary, to improve the individual's ability to adapt in life through spiritual awakening, which is associated with higher post-traumatic development, higher unconditional acceptance and, last but not least, an improved psychological state of well-being. Another significant aspect of the present study was that we wanted to determine whether there were differences in terms of the variables studied between oncology patients in the diagnosis phase and those who had a life-threatening

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experience. The results showed that, there was a significant difference between groups *F(1; 204)* = 5.37, *p* = .021, *t(196.79)* = 22.26, *d* = 3.11, which suggests that oncological patients reported a higher level of anxiety as a state compared to people who had a life threatening experience, the results indicating very large effects, in the case of unconditional acceptance of one's own person the results indicate a significant difference between groups *F(1; 204)* = 18.33, *p* = .000, *t(167.66)* = -24.30, *d* = 3.39, which suggests that oncological patients reported a lower level of unconditional acceptance compared to those who had a life threatening experience, in the case of posttraumatic development *F(1; 204)* = .26, *p* = .61, *t(204)* = -41.20, *d* = 5.77, this variable being more developed in the case of those with a life threatening experience, in the case of psychological well-being *F(1; 204)* = 42.56, *p* = .000, *t(167.07)* = -19.37, *d* = 2.71, and in the case of the purpose and meaning of life *F(1; 204)* = .84, *p* = .772, *t(204)* = -19.94, *d* = -2.78 being also of a higher level in the case of those who had an experience that threatened their life.

People who have had an experience that threatened their life report lower anxiety, an increase in post-traumatic development, unconditional acceptance of oneself, psychological well-being, and the purpose and meaning of life, compared to oncology patients in the diagnosis phase, when they are faced with an unknown situation, also having a feeling of imminent loss (Wortman & Silver, 1989), and of course in the case of patients who have faced an experience that threatened their life, they experience a state of rebirth, and the spiritual experiences they report also play an essential role. The experience of confronting death is often perceived as a spiritual awakening, which leads in the case of those with an experience that threatened their life to a profound reevaluation of life and a change in the way they perceive existence (Tedeschi & Calhoun, 1996).

The last hypothesis of the study claims that there is a level of association between belonging to a certain group of patients in the initial phase, patients with an experience that threatened their life and patients in the terminal phase of the disease and the presence of spiritual experiences NDEs/DBVs/ELEs. The results $\chi^2(2, N=309) = 135.53$, $p < 0.001$, Cramer's V Coefficient = 0.66 showed a strong association between these variables, the results also suggesting that the patients in the terminal phase had the highest number of spiritual experiences, then by those with an experience that threatened their life, and those in the diagnostic phase of the disease. Patients in the terminal phase find a lot of comfort in spirituality, sometimes also in religion, which strengthens their position in the face of adversities and, above all, helps them to cope with the situation they are facing, and spiritual experiences represent for them, but also for those around them, a source for increasing psychological well-being (Lee et al., 2023).

Our study also has limitations. First of all, the relatively modest sample size (309 participants) and the limited geographical distribution of the subjects, since they were all patients of a single local County Hospital. The second limitation is the cross-sectional part of our study, that makes a robust investigation of causal effects impossible. A larger scale study could lead to national strategic proposals in attending the mental health of people, reinforcing the role and importance of developing spirituality in order to reduce death anxiety which is also associated with other mental disorders. Equally, a study of this type developed on a national scale could also lead to the adoption of programs and their implementation in order to increase the quality of life of oncological patients. Last but not least, such a study can bring to the forefront the role and importance of spiritual awakening for each individual in order to increase the capacity to adapt in life, in general.

5. Conclusions

Our study suggests that time has a strong influence on anxiety as a state, unconditional acceptance of oneself, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life, among patients in the initial phase of cancer and patients in the final phase of the disease, because patients in the diagnosis phase presented higher scores of anxiety as a state, lower scores of unconditional acceptance of oneself, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life, and the differences between Time 1 and Time 2 were

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significant. These results can be explained by the fact that in the initial diagnosis phase, people experience anxiety as they face an unknown situation, but if we take into consideration the fact that spiritual experiences may take place in a period of time, fact also demonstrated in this research, as the most frequent spiritual experiences were in the case of the final disease group, we can say that spiritual experiences progressively intensify influencing their well-being and the anxiety levels, as people learn to cope with the threat of death. This is why Mindfulness-based therapy and spiritual meditation can reduce death anxiety by promoting existential acceptance and diminishing fear of the unknown, as Ando et al., (2010), demonstrated that spiritual meditation helps cancer patients reduce fear of death. Terminal cancer patients often report higher levels of spirituality which correlates with reduced anxiety and depressive symptoms so we may say that these experiences lead to a better quality of life in these patients, and not only, people who face death anxiety should integrate in their daily routine Mindfulness meditation and also spiritual meditation. We should also mention the fact that not all forms of religiosity reduce death anxiety as fear-based beliefs can increase anxiety, while love and compassion-based beliefs can reduce it, because religious beliefs based on love reduce death anxiety, whereas fear-based beliefs amplify it (Ellison & Fan, 2008).

This study also showed that patients who are survivors of an experience that threatened their life report significant spiritual transformations, and also present a lower level of state-anxiety, and higher levels of unconditional acceptance of oneself, post-traumatic development, general psychological well-being, but also an essential component of it such as the purpose and meaning of life, by comparison with patients in the initial diagnosis phase. These transformative experiences catalyze psychological resilience and offer a way to make sense of existential concerns, leading to more profound personal growth and emotional healing. Patients who are survivors of an experience that threatened their life report greater acceptance, post-traumatic growth, well-being and a renewed sense of life purpose (Moody, 2005).

All in all, facing mortality more directly may act as a catalyst for spiritual development and psychological resilience. Also, incorporating spiritual assessments and interventions into clinical care is critical for addressing the multifaced dimensions of health, particularly in the context of serious illness and death (Koenig, 2012).

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Abbreviations

The following abbreviations are used in this manuscript:

NDE	Near Death Experience(s)
DBV	Deathbed Vision(s)
ELE	End of Life Experience(s)
PWB-R	Ryff's Psychological Well-Being Scale
STAI	State-Trait Anxiety Inventory

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