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Research Article

Relationship Satisfaction, Co-Parenting, Spiritual Disclosure, and Religious/Spiritual Coping: Exploring Links to Parents' Mental Health following a Neonatal Intensive Care Experience

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Abstract

The birth of a child is often a joyous occasion, but when a family experiences a neonatal intensive care stay, there may be mental health and relationship implications. In this quantitative study, 162 former neonatal intensive care (NICU) parents completed surveys related to their anxiety (PSWQ; Meyer et al., 1990), stress (SASRQ-for NICU; Cardena et al., 2000), depression (CESD-R; Eaton et al., 2004), relationship satisfaction (RAS; Hendrick et al., 1998), and co-parenting (Brief Measure of Co-Parenting; Feinberg et al., 2012) along with self-reports of religious/spiritual coping (Brief RCOPE; Pargament et al., 2011) and spiritual disclosure (SDS; Brelsford & Mahoney, 2008) in the couple relationship. Participants were acquired after soliciting names from a state Bureau of Health Statistics and mothers were contacted via mail with a second survey for her co-parent/partner. Respondents to this survey were married or were living together as partners. Infants were born on average at 31.65 weeks' gestation and spent an average of 33.23 days in the NICU. The average time elapsed between NICU discharge and parent survey completion was 414 days. Analyses were conducted via SPSS Version 28 and results indicated that there were significant inverse correlations between parents' mental health and their relationship functioning (spiritual disclosure, relationship satisfaction, and co-parenting). Moreover, parents' mental health challenges were significantly related to increased use of negative religious/spiritual coping. Finally, after accounting for relationship functioning, parents' use of negative religious coping had a significant link to their mental health outcomes. Thus, when parents are experiencing difficulties with their mental health after a NICU experience, they may struggle more with their marriage, co-parenting, and engage in more negative religious/spiritual coping. Therefore, additional research is needed on ways to support parents' mental health, relational functioning, and religious/spiritual lives following a NICU experience.

Keywords:
Spirituality • Religious/Spiritual Coping • Co-Parenting • Mental Health • Relationship Satisfaction

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Introduction

Along with the typical challenges that come with the birth of a child, the appearance of a fragile, sick infant and changes to the parental role can cause significant emotional distress in parents who have a child in neonatal intensive care (NICU; MacIntosh, Stern, & Ferguson, 2004). Many parents are unprepared for their infant's hospitalization and develop concerns about the potential for long-term negative outcomes for their child. Initially, not being able to hold the infant causes parental emotional distress, and later, due to the infant's potentially unstable condition, a variety of difficult emotions such as anxiety, depression, or PTSD can emerge (Seideman et al., 1997). This emotional distress can impact parents' ability to emotionally bond with their infant and respond to their needs. These difficulties coupled with prolonged mother-infant separation, frequent lack of privacy during infant care, and lack parental support in the NICU can exacerbate stress while in the NICU and have implications for parenting post-NICU discharge. Most research supports that parents' experiences in the NICU often result in elevated stress levels, anxiety, and depression (Greene et al., 2015). Parents' emotional difficulties can also cause concerns about parenting confidence and the co-parenting relationship, which includes being able to adequately meet the physical and emotional needs of the infant, post-discharge (Harris, et al., 2018).

In addition to psychological challenges, many parents may find that their religious and spiritual worldviews have relevancy in a neonatal intensive care setting (Brelsford & Doheny, 2016). Parents' religious and spiritual worldviews shape the way that families cope with stressful life situations and are often interwoven into the fabric of their psychological experiences (Mahoney, 2010). Having a child is a fundamental life turning point imbued with expectations often framed with spiritual or religious significance. Like most life changing experiences, the inculcation of religious or spiritual significance can have both positive and negative intrapersonal and interpersonal impacts when people are placed in a stressful, potentially traumatic situation. Thus, the importance of addressing spiritual and religious beliefs and coping strategies while in this stressful situation are necessary and important.

Indeed, parental stress and anxiety can be impacted via the methods of coping through both secular and spiritual/religious means. In this study, we focused on religious/spiritual (R/S) coping, which can include both adaptive and maladaptive ways of dealing with a stressful situation. R/S coping is theorized to entail either a positive or a negative dimension and is often called positive or negative R/S coping (Ano & Vasconcelles, 2005; Pargament et al., 2000). Positive spiritual coping reflects a more secure relationship with God that manifests in benevolent religious reappraisals (e.g. God walks with me through this challenging time) and seeking out religious or spiritual support through prayer or with members of a spiritual community, whereas

negative spiritual coping suggests a strained or challenging relationship with God and frequently results in punitive religious reappraisals (e.g., God is angry with me and therefore punishing me through this stressful event) and spiritual/religious discontent (e.g., God is not reliable and therefore I cannot count on God to help me through this situation; Pargament et al., 2000). Thus, spiritual coping can include leaning on God for support, working with God to put plans into action, feeling abandoned by God, questioning God's love, questioning the meaning of life, and experiencing spiritual doubts, for example.

Religious and spiritual worldviews contextualize parents' life experiences in both theistic (i.e., God or gods) or non-theistic ways (i.e., general spirituality not tied to a deity; Mahoney, 2010). In our previous work, we found that NICU parents often engage in both adaptive and maladaptive forms of R/S coping (Brelsford et al., 2016). In particular, we found that increases in maladaptive forms of R/S coping co-occur with positive R/S coping. Thus, parents may report being abandoned or feeling angry with God while also leaning on God for support and love. This is a complex picture of coping, but make sense with the tenuous and unpredictable course of having an infant in the NICU. In a qualitative study, we also found that parents who endorsed higher religiousness or spirituality, reported being able to grow their spirituality and use their R/S beliefs to more effectively cope post NICU discharge (Brelsford & Doheny, 2016). We have also found that spiritual struggles with meaning are related to increases in parents' depression and anxiety (Brelsford et al., 2019). Finally, most recently, we found that higher levels of parental stress in the NICU was related to spiritual struggles, particularly with meaning making about life post-NICU discharge (Brelsford & Doheny, 2022). All these studies support the importance of continued exploration of parents' religious and spiritual beliefs and how they cope with the NICU. In summary, there is small body of research focused on the R/S coping, views, and practices in relation to familial functioning for NICU parents, but it is limited in scope.

In addition, there is a paucity of research exploring NICU parents' spiritual and religious worldviews and struggles in relation to their co-parenting and relationship functioning. Our previous work in the NICU has shown that when parents feel God has abandoned them or when they feel angry at God that they experience poorer family cohesion and increased use of denial (Brelsford et al., 2016), but this is the only study to explore these constructs to date.

The relational spirituality framework developed by Mahoney (2010) highlights how the formation, maintenance, and transformation of familial relationships is related to one's religious and spiritual beliefs, particularly their religious and spiritual behaviors, thoughts, and emotions. Specifically, "relational spirituality refers to when the search for the sacred is united, for better or worse, with the search for relationships" (Mahoney

& Boytazis, 2019, p. 522). Spiritual disclosure could be integrated into this relational spirituality framework due to the important aspects of this concept that focuses on sharing of vulnerable religious and spiritual views with a romantic partner and co-parent. This sharing can come with challenges if one partner does not agree with the other partner on these spiritual and religious views, but sharing nonetheless may signal a closer bond and be a safe haven for exploring value systems that are often informed by R/S views, beliefs, behaviors, and traditions. Thus, we wanted to explore this concept further with former NICU parents and better understand how spiritual disclosure is related to their mental health and along with co-parenting and relationship satisfaction.

Current Study

In this study we had two aims: The first aim was to explore connections between NICU parents' relationship satisfaction, co-parenting behaviors, spiritual disclosure in relation to their use of positive and negative R/S coping. The second aim was to explore connections between relational factors such as relationship satisfaction, co-parenting, spiritual disclosure, and parents' psychological well-being via their self-reports on anxiety, stress related to the NICU experience, and depression. Thus, this was an exploratory study, but we hypothesized that parents' mental health difficulties would be related to more relationship difficulties and poorer R/S coping or alternatively better relationship functioning and spiritual disclosure would be related to better mental health outcomes and increased use of positive religious and spiritual coping.

Method

This quantitative study included 110 mothers, 51 fathers, and one non-binary parent, resulting in a total sample size of 162 individuals. Out of these participants, 110 were biological mothers, 50 were biological fathers, and two were a non-biological second caregiver. These participants were recruited from a US state Bureau of Health Statistics and Studyfinder at a Mid-Atlantic Children's Hospital. Inclusion criteria required that parents had premature babies who experienced a NICU stay, but did not experience infant death at the time of data collection. Further, to be included in this study, parents must be fluent in English and be 18 years of age or older. Mothers and fathers were contacted separately via regular mail, following university Institutional Review Board (IRB) approval, and were invited to complete a survey. Families who returned the surveys were compensated with a gift card as a token of appreciation for their participation. For the full study, out of the 1,013 surveys mailed to mothers, a total of 123 surveys were returned, resulting in a response rate of 12.1%. Additionally, nine mothers were recruited through Studyfinder, the university hospital's study locator website. Therefore, a total of 185 valid responses from parents/caregivers were obtained from the full study. However, for this study, we explored the responses

of 162 parents/caregivers because of our focus on caregivers in a romantic/co-parenting relationship. Thus, of these 162 responses, 143 were from parents who are married (88.3%) and 19 respondents reported living with their partner but were not married (11.7%).

Table 1
Means, Standard Deviation, Minimum and Maximum scores, and Internal Consistency of Primary Study Variables and Scales

Constructs	*M*	*SD*	*Min*	*Max*	*a*
Stress	32.26	27.94	0	114	.95
Worry	48.97	15.90	19	80	.95
Depression	30.65	14.66	20	100	.91
Positive religious coping	14.14	7.52	7	28	.97
Negative religious coping	9.24	3.78	7	23	.88
Co-parenting	69.13	13.65	13	84	.89
Relationship satisfaction	28.26	4.82	12	33	.86
Spiritual disclosure	43.95	17.99	19	76	.96

M = Mean, SD = Standard Deviation, Min = Minimum, Max = Maximum

Regarding the characteristics of the infants, the average gestational age was 31.65 weeks, with a range of 24 to 39 weeks. Infants spent an average of 33.23 days in the Neonatal Intensive Care Unit (NICU), with a range of 5 to 112 days and 91.7% of parents had no previous experience with the NICU. Infants' average birth weight was 3.60 pounds. Also, the mean time elapsed between NICU discharge and parent survey completion was 414 days (ranging from 62 to 968 days), so on average parents completed these surveys over a year after NICU discharge.

For this study, participants provided information about their age, biological sex, race and ethnicity, marital status, educational qualifications, employment status, and income. Additionally, parents' religious and spiritual lives were assessed through questions such as self-perceived religiousness and spirituality, attendance at religious services, engagement in prayer, and religious affiliation.

To assess religious and spiritual (R/S) coping, participants completed the Brief RCOPE (Pargament et al., 2011). This scale was comprised of 14 items, with 7 items each for positive and negative religious and spiritual coping subscales. Participants rated the frequency of their use of each coping strategy on a Likert scale ranging from 1 (not at all) to 4 (a great deal). In this study, the positive R/S coping subscale demonstrated good internal consistency (Cronbach's alpha = .97), as did the negative R/S coping subscale (Cronbach's alpha = .88). Historically, the Brief RCOPE has been shown to possess good concurrent validity, predictive validity, and incremental validity in predicting well-being, even when controlling for factors such as race, age, sex, mood, and social support (Pargament et al., 2011).

Anxiety levels were assessed using the Penn State Worry Questionnaire (PSWQ) developed by Meyer et al. (1990). This scale consisted of 16 self-report items that

measured an individual's tendency, frequency, and disposition to worry. Participants rated each item on a Likert scale ranging from 1 (not at all typical of me) to 5 (very typical of me). Higher scores on the PSWQ indicate higher levels of worry. In this study, the PSWQ exhibited good internal consistency (Cronbach's alpha = .95) and has demonstrated high convergent and discriminant validity in both clinical and non-clinical samples (Meyer et al., 1990).

Depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale—Revised (CESD-R) developed by Eaton et al. (2004). This 20-item scale assessed participants' experiences and symptoms of depression over a two-week period, with responses ranging from 0 (not at all or less than one day) to 4 (nearly every day). A total CESD-R score was computed by summing the ratings across all 20 items. Higher scores indicate a greater presence of depressive symptoms. The CESD-R demonstrated good internal consistency in this study (Cronbach's alpha = .91) and has shown strong convergent and discriminant validity in previous research (VanDam & Earleywine, 2011).

Parents' experiences of stress following NICU discharge were assessed using the Stanford Acute Stress Reaction Questionnaire (SASRQ) developed by Cardeña et al. (2000). This 30-item questionnaire measures the frequency of stress-related experiences on a scale ranging from 0 (not experienced) to 5 (very often experienced). Participants were also asked to indicate the number of days they experienced each symptom, with response options ranging from 0 days to 5 or more days. The SASRQ demonstrated good psychometric properties in this study, with a Cronbach's alpha coefficient of .95 in this study. The measure has been found to possess good content validity, as well as convergent and discriminant validity (Cardena et al., 2000).

The Relationship Assessment Scale (RAS; Hendrick et al., 1998) was used to measure relationship satisfaction among participants and their partners. The RAS is a 7-item measure that uses a 5-point scale. Responses range from 1 (low satisfaction) to 5 (high satisfaction). Participants are asked questions such as "How well does your partner meet your needs?" and "How often do you wish you hadn't gotten into this relationship?" Scoring on this scale reflects receiving a high/low score, therefore, the lower the score the less satisfied you are with your partner and vice versa for a high score. Previous studies have shown that the RAS produces high internal consistency (Graham et al., 2011). The internal consistency for this present study was .86.

The Spiritual Disclosure Scale (Brelsford & Mahoney 2008) was used to measure spiritual and religious openness. It is a 20-item measure that asks questions about religious and spiritual conversations with their partners on a scale of 1 (never) to 4 (often). Participants are asked questions such as "I share information about my spiritual journey with my partner." The Spiritual Disclosure Scale demonstrated high

internal consistencies in prior research (Brelsford & Mahoney, 2008; Luquis et al., 2012). The internal consistency of this measure was .96 for this study.

The Brief Measure of Co-Parenting (Feinberg et al., 2012) is a 14-item scale used to assess the co-parenting relationship. This measure is a brief measure of the full-scale Co-Parenting Relationship Scale. The brief measure of co-parenting assessed coparenting agreement; division of labor related to coparenting. exposure to conflict. coparenting support, undermining coparenting, endorsement of partner's parenting, and coparenting closeness with seven items being reverse coded to provide a total score with higher scores indicating a more effective co-parenting relationship. Each item is rated on a 7-point scale ranging from 0 (not true of us) to 6 (very true of us). The full scale of the Co-Parenting Relationship Scale has good reliability and stability (Feinberg et al., 2012). Internal consistency for the brief scale in the current sample was $\alpha = .89$.

Results

Participant Demographics

Participants in this study were on average 31.6 years old with a range of 19-63 years, with mothers being slightly younger than fathers on average (30 vs. 33 years of age). A majority of participants (88.3%) identified as White, 2.5% as African American/ Black, 3.0% as LatinX, 1.8% as Asian/Pacific Islander, .6% as American Indian/ Alaskan Native, and 3.8% as Other/Biracial/ Multiracial. Most mothers in this sample reported having some college experience to a graduate degree (84.9%) and most were employed full-time (55.6%), while 28.7% reported being stay at home parent. Similarly, 79.6% of fathers, reported attending some college to receiving a graduate degree and most reported working full time (87.4%). Mothers' most common response on income was under $25,000 (40.5%) with the second most indicated response of $50,000-$74,999 (22.9%); whereas most fathers reported an income of $50,000-$74,999 (32.3%) and the second most common response was $35,000-$49,999 (19.4%).

Most parents identified as Catholic (20.8%), 2.6% Presbyterian, 2.6% Muslim, 2.6% Congregational, 3.9% Baptist, 5.8% Lutheran, 0.6% Hindu, 9.7% atheist, 7.1% agnostic, 13.6% no religious affiliation, and 25.3% as other religious affiliation. In this study, 34% of parents reported being not religious at all, 27.7 % slightly religious, 21.4% moderately religious, and 17% considered themselves very religious. With respect to spirituality, 21.6% parents considered themselves to be very spiritual, 25.9% moderately spiritual, 27.2% slightly spiritual, and 25.3% not spiritual at all. Most parents also stated that they do not go to religious services (34.6%) or pray (31.7%). Yet, about 23.6% stated that they pray more than once a day and 19.8% of parents stated

that they attend religious services every week or more. Overall, a higher percentage of mothers reported engaging in prayer, attending religious services, seeing themselves as religious or spiritual, and having a religious affiliation than fathers.

Analyses

We conducted basic descriptive analyses (mean, *SD*, range, alphas) for all major study variables (positive and negative R/S coping, depression, anxiety, stress, co-parenting, spiritual disclosure, and relationship satisfaction) using SPSS Version 28. Next, we performed Pearson product-moment bivariate correlations between all major study variables to explore the statistical associations between variables. Finally, we completed three hierarchical regression models where parents' relationship satisfaction and co-parenting were in the first step, followed by positive and negative R/S coping and spiritual disclosure in the second step. Each model was used to determine the significant predictors for each outcome variable (depression, anxiety, and stress), to understand the unique contribution that R/S coping and spiritual disclosure has toward each of these outcome variables.

Correlations

Pearson product-moment correlations were conducted between all major study variables. Regarding the three main outcomes variables relating to parents' mental health, parents' anxiety was significantly positively correlated with negative religious coping (r = .24, p < .05). and significantly inversely correlated with relationship satisfaction, co-parenting, and spiritual disclosure (r = -.28, -.33, and -.20, p < .01) with (r =-.28 and -.33, p < .01, respectively; r = -.20, p < .05). For parents' depression, there was a significant positive correlation with their use of negative religious coping (r = .31, p < .01). and significant inverse correlations with relationship satisfaction and co-parenting (r = -.37, and -.52, p < .01, respectively). Finally, for parental stress, there was a similar result with a significant positive correlation with use of negative religious coping (r = .36, p < .01) and significant inverse correlations with relationship satisfaction and co-parenting (r = -.30 and -.35, p < .01, respectively).

When exploring parents' relational functioning, there was a significant positive correlation between their use of spiritual disclosure and their relationship satisfaction (r = .26, p < .01). and co-parenting. (r = .28, p < .01). There was also a significant positive correlation between relationship satisfaction and use of positive religious coping (r = .21, p < .05; see Table 2 for all intercorrelations).

Table 2
Correlations among Primary Study Variables

	1	2	3	4	5	6	7	8
1. Anxiety	--							
2. Stress	.50**	--						
3. Dep.	.46**	.56**	--					
4. Spir. Dis.	-.20*	-.14	-.10	--				
5. Rel. Sat.	-.28**	-.30**	-.37**	.26**	--			
6. Co-Par.	-.33**	-.35**	-.52**	.28**	.75**	--		
7. Pos. RC	-.15	-.04	-.01	.77**	.21*	.15	--	
8. Neg. RC	.24*	.36**	.31**	.17	-.06	-.12	.30**	--

Note: N = 116. Dep = Depression. Spir. Dis. = Spiritual Disclosure. Rel. Sat. = Relationship Satisfaction. Co-Par.= Co-Parenting. Pos. RC = Positive Religious Coping. Neg. RC= Negative Religious Coping.

Hierarchical Multiple Regressions

Hierarchical multiple regression analyses were conducted to explore how R/S coping and spiritual disclosure related to parents' stress, anxiety, and depression, respectively, after accounting for co-parenting and relationship satisfaction. This incremental validity model was utilized to determine if after accounting for relational functioning, that R/S coping and spiritual disclosure was related to parents' mental health outcomes. Thus, relationship functioning variables (relationship satisfaction and co-parenting) were entered into the first step of the regression equation followed by negative and positive religious coping and spiritual disclosure in the second step predicting to each of the mental health outcomes (parental stress, depression, and anxiety).

For the first regression, with the outcome variable of parental anxiety, the first step of the model contributed 10% of the variance with co-parenting having a significant β = -.27 (p < .05) and the second step accounted for 7% of the variance with negative R/S coping having a significant β = .21 (*p* < .05; see Table 3).

Table 3
Hierarchical Regression of Parents' Relationship Functioning and Spirituality on their Levels of Anxiety

	Variable	Model 1			Model 2	
	B	SE(B)	β	B	SE(B)	β
Co-Parenting	-.33*	.15*	-.27*	-.26	.15	-.21
Relationship Satisfaction	-.21	.40	-.06			
Negative Religious Coping				.96*	.39*	.21*
Positive Religious Coping				-.12	.29	-.05
Spiritual Disclosure				-.14	.12	-.16
R^2	.10**			.17*		
F for change in R^2	7.51*			3.28**		

Note. * *p* < .05. ***p* < .01.

For the second regression, with the outcome variable of parents' depression, the first step of the model contributed 22% of the variance with co-parenting having a significant β =-.27 (*p* < .05) and the second step accounted for 7% of the variance with negative R/S coping having a significant β = .21 (p < .05, see Table 4).

Table 4
Hierarchical Regression of Parents' Relationship Functioning and Spirituality on their Levels of Depression

	Variable	Model 1			Model 2	
	B	SE(B)	β	B	SE(B)	β
Co-Parenting	-.33*	.15*	-.27*	-.26	.15	-.21
Relationship Satisfaction	-.21	.40	-.06	-.16	.40	-.05
Negative Religious Coping				.96*	.39*	.21*
Positive Religious Coping				-.12	.29	-.05
Spiritual Disclosure				-.14	.12	-.16
R^2	.22**			.29*		
F for change in R^2	18.76**			4.20*		

Note. * $p < .05$. ** $p < .01$.

Finally, for the third regression, with the outcome variable of parental stress, the first step of the model contributed 11% of the variance with co-parenting having a significant β = −.30 ($p < .05$) and the second step accounted for 12% of the variance with negative R/S coping having a significant β= .36 ($p < .05$; see Table 5).

Table 5
Hierarchical Regression of Parents' Relationship Functioning and Spirituality on their Levels of Stress

	Variable	Model 1			Model 2	
	B	SE(B)	β	B	SE(B)	β
Co-Parenting	-.65**	.26*	-.30*	-.56*	.25*	-.26*
Relationship Satisfaction	-.19	.69	-.03	-.11	.66	-.02
Negative Religious Coping				2.71**	.63**	.36**
Positive Religious Coping				-.46	.29	-.12
Spiritual Disclosure				.04	.19	.02
R^2	.11**			.23**		
F for change in R^2	7.83**			6.21**		

Note. * $p < .05$. ** $p < .01$.

Discussion

This was the first study to explore former NICU parents use of spiritual disclosure and R/S coping in relation to their relationship functioning. A main finding was that parents who talk about religious or spiritual issues tend to have better relationship satisfaction and co-parenting and engaged in more positive R/S coping, which can include praying to God or looking to benevolent aspects of their spirituality to cope with challenges. Further, those parents who used more negative forms of R/S coping tended to have poorer psychological well-being (including anxiety, depression, and stress), which has been found in other studies of NICU parents (Brelsford & Doheny, 2016). Further, those parents who reported experiencing more psychological distress also reported lower levels of relationship satisfaction, challenges with caregiving, and less open R/S discussions. All of these relational factors could contribute to feeling higher levels of anxiety, stress, and depression after experiencing a challenging situation with a newborn. Since the experience of birth and parenting has been

disrupted, parents may feel guilt or other challenging emotions, which could in turn exacerbate pre-existing difficulties with mental health or could be the impetus for increased anxiety, depression, and stress.

Relationally, the finding that spiritual disclosure, which entails open discussions with a spouse or partner, is related to lower levels of anxiety and use of positive religious coping has implications for therapists and counselors who work with these former NICU parents. Additionally, parents' use of spiritual disclosure was also related to better relationship satisfaction and co-parenting, which is important when navigating a stressful life situation such as the NICU. Some children will continue to have medical impacts even a year after discharge, and therefore having a supportive partner can be an important factor in better mental health, which is also an important finding in relation to therapeutic work with these families. This finding harkens back to the relational spirituality framework (Mahoney, 2010), which focuses on the formation, maintenance, and transformation of relationships through the lens of spiritual connections. This spiritual connection may be even more important in the NICU setting and post discharge when emotions can be high and people may find that they lean on faith to navigate the unknown of having a child with health conditions so early in life. Alternatively, this could be a time that parents stop communicating with each other about their views, beliefs, and aspirations, which could degrade the co-parenting/romantic relationship resulting in dissolution of some marriages. Thus, finding a way to engage and share with each other about the more vulnerable aspects of life, including questioning faith, leaning into God's will, or even being angry with God can be safer in a healthy partner relationship.

This study is important in that NICU parents can have more fragile family units due to the stress of parenting a sick child or experiencing different emotions following a NICU experience. Thus, when parents have relationship challenges, trickledown effects on children can occur. In general, there are few psychological supports in NICUs and even fewer psychological supports include a spiritual component. Family-integrated NICU care places an emphasis on the family unit as a method of increasing the quality of care for the neonate (He et al., 2018), but few short-term interventions exist to address parental distress and R/S aspects of their lives. Interventions stemming from a psychospiritual framework may be especially appropriate for NICU parents given the increased risk for death and/or life-long health problems necessitating their infant's NICU placement. The psychospiritual perspective, which includes both psychological and spiritual aspects of health and wellness, can positively impact parents' ability to cope with stressors while in the NICU and bolster positive perceptions of their ability to parent a fragile newborn. Thus, this study provides additional supports for this family centered care lens that focuses both on parents' relational functioning and their religious and spiritual lives as factors in their mental health.

Limitations

The limitations of this study include the cross-sectional nature of the data, which inhibits the ability to infer causation. Further, although the focus of this study was exploring outcomes related to parental mental health in relation to their R/S coping and spiritual disclosure and other relational factors, it could also be said that mental health impacts one's relationship satisfaction and co-parenting. Further, our sample was rather homogenous in that we had little racial and religious diversity as most participants were white, Christian, and reported having some college education. Thus, the generalizability of these findings to non-Christian parents from more ethnically and economically diverse backgrounds may be limited. However, it does appear that we had a robust sample of non-affiliated parents and those who reported atheist or agnostic views. In addition, we combined mothers' and fathers' reports for this study. Due to the small number of fathers in this study, we opted for this approach.

Another limitation to note, is that we did not explore parents' mental health prior to entering the NICU, which could impact results from this study. We only have one time point for this study, which was post NICU discharge and the average response was a year following that intensive care experience. Thus, parents likely have settled into life with their newborn and may have found ways and means to cope more effectively with the NICU experience a year later. Other individuals may continue to struggle with feeling guilty or responsible for their infant's NICU experience, which is more common with mothers.

Conclusion and Implications

When thinking about how to support families in the NICU and post discharge from this intensive care setting, practitioners should consider family-based interventions, which involve supporting and educating parents while also integrating them into care of their newborn. Family-integrated care, places parents at the center of the NICU experience in that they are fully integrated into the care of their infant via presence at the bedside, engagement in feeding and infant care, and participating in medical rounds (Franck & O'Brien, 2019). This approach also includes mandatory parent education and peer support that are central to improved short and long-term parenting outcomes such as stress and anxiety. Since family-centered care involves parents as partners and stems from core values of respect and dignity for the family, involving them in caregiving while maintaining transparency in the provider-family relationship would yield the best outcomes upon discharge. Including their R/S views, values, ways of coping, and spiritual conversations would be an important addition to family care. Thus, the presence of psychological supports inculcated with R/S aspects might best serve our families who are navigating a neonatal intensive care experience. Providing a safe space to talk about psychological concerns, spiritual questions and doubts, relationship concerns, and other intrapersonal challenges could mean that not only do

parents experience a more positive NICU experience, but also when they transition to caring for their infant on their own, they may feel more confident with the supports they have acquired and strategies they have gained while in the intensive care setting.

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References

Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology,* 61(4), 461-480. https://doi.org/10.1002/jclp.20049

Brelsford, G. M., & Doheny, K. K. (2022). Parents' spiritual struggles and stress: Associations with mental health and cognitive well-being following a neonatal intensive care unit experience. *Psychology of Religion and Spirituality, 14*(1), 119-127. http://dx.doi.org/10.1037/rel0000381

Brelsford, G. M., &, Doheny, K. K. (2016). Religious and spiritual journeys: Brief reflections from mothers and fathers in a neonatal intensive care unit (NICU). *Pastoral Psycho*logy*, 65*(1), 79-87. https://doi.org/10.1007/s11089-015-0673-1

Brelsford, G. M., Doheny, K. K., & Nestler, L. M. (2019). Parents' post-traumatic growth and spirituality post neonatal intensive care unit discharge. *Journal of Psychology and Theology.* Advance online publication. https://psycnet.apa.org/doi/10.1037/rel0000381

Brelsford, G. M., & Mahoney, A. (2008). Spiritual disclosure between older adolescents and their mothers. *Journal of Family Psychology, 22,* 62-70. https://doi.org/10.1037/0893-3200.22.1.62

Brelsford, G. M., Ramirez, J., Veneman, K., & Doheny, K. K. (2016). Religious and Secular Coping and Family Relationships in the Neonatal Intensive Care Unit. *Advances in Neonatal Care: Official Journal of the National Association of Neonatal Nurses*, *16*(4), 315-322. https://doi.org/10.1097/ANC.0000000000000263

Cardena, E., Koopman, C., Classen, C., Waelde, L. C., & Spiegel, D. (2000). Psychometric properties of the Stanford Acute Stress Reaction Questionnaire (SASRQ): A valid and reliable measure of acute stress. *Journal of Traumatic Stress, 13*(4), 719–734. https://doi:10.1023/a:1007822603186

Eaton, W. W., Smith, C., Ybarra, M., Muntaner, C., & Tien, A. (2004). Center for Epidemiologic Studies Depression Scale: Review and Revision (CESD and CESD-R). In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment: Instruments for adults* (p. 363–377). Lawrence Erlbaum Associates Publishers.

Feinberg, M. E., Brown, L. D., & Kan, M. L. (2012). A multi-domain self-report measure of coparenting. *Parenting, Science and Practice*, *12*(1), 1–21. https://doi.org/10.1080/15295192.2012.638870

Franck, L. S., & O'Brien, K. (2019). The evolution of family-centered care: From supporting parent-delivered interventions to a model of family integrated care. *Birth defects research*, *111*(15), 1044–1059. https://doi.org/10.1002/bdr2.1521

Graham, J. M., Diebels, K. J., & Barnow, Z. B. (2011). The reliability of relationship satisfaction: A reliability generalization meta-analysis. *Journal of Family Psychology, 25*(1), 39-48. https://doi.org/10.1037/a0022441

Greene, M. M., Rossman, B., Patra, K., Kratovil, A. L., Janes, J. E., & Meier, P. P. (2015). Depressive, anxious and perinatal post-traumatic distress in mothers of very low birth weight Infants in the NICU. *Journal of Developmental and Behavioral Pediatrics, 36*(5), 362-370. https://doi.org/10.1097/DBP.0000000000000174

Harris R., Gibbs, D., Magin-Heimos, K., & Pineda, R. (2018). Maternal mental health during the neonatal period: Relationships to the occupation of parenting. *Early Human Development*, 120, 31-39. https://doi.org/10.1016/j.earlhumdev.2018.03.009

He, S. W., Xiong, Y. E., Zhu, L. H., Lv, B., Gao, X. R., Xiong, H., Wang, H., Shi, H. R., & Latour, J. M. (2018). Impact of family integrated care on infants' clinical outcomes in two children's hospitals in China: A pre-post intervention study. *Italian Journal of Pediatrics*, *44*(1), 65. https://doi.org/10.1186/s13052-018-0506-9

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The Relationship Assessment Scale. *Journal of Social and Personal Relationships, 15*(1), 137-142. https://doi.org/10.1177/0265407598151009

Luquis, R. R., Brelsford, G. M., & Rojas-Guyler, L. (2012). Religiosity, spirituality, sexual attitudes, and sexual behaviors among college students. *Journal of Religion and Health, 51*, 601-614. https://psycnet.apa.org/doi/10.1007/s10943-011-9527-z

Mahoney, A. (2010). Religion in families, 1999–2009: A relational spirituality framework. *Journal of Marriage and Family*, *72*(4), 805-827. https://doi.org/10.1111/j.1741-3737.2010.00732.x

Mahoney, A., & Boyatzis, C. J. (2019). Parenting, religion, and spirituality. In M. H. Bornstein (Ed.), *Handbook of parenting: The practice of parenting* (pp. 515–552). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9780429401695-18

McIntosh, B. J., Stern, M., & Ferguson, K. S. (2004). Optimism, coping, and psychological distress: Maternal reactions to NICU hospitalization. *Children's Health Care*, *33*(1), 59-76. https://psycnet.apa.org/doi/10.1207/s15326888chc3301_4

Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 28*(6), 487-495. https://doi.org/10.1016/0005-7967(90)90135-6

Pargament, K. I., Feuille, M., & Burdzy, D. (2011). The Brief RCOPE: Current psychometric status of a short measure of religious coping. *Religions, 2*(1), 51-76. https://doi.org/10.3390/rel2010051

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology, 56*(4), 519-543. https://doi.org/10.1002/(sici)1097-4679(200004)56:4<519::aid-jclp6>3.0.co;2-1

Seideman, R. Y., Watson, M. A., Corff, K. E., Odle, P., Haase, J., & Bowerman, J. L. (1997). Parent stress and coming in NICU and PICU. *Journal of Pediatric Nursing*, *12*(3), 169-177. https://doi.org/10.1016/s0882-5963(97)80074-7

VanDam, N.T., & Earleywine, M. (2011). Validation of the Center for Epidemiologic Studies Depression Scale--Revised (CESD-R): Pragmatic depression assessment in the general population. *Psychiatry Research, 186*(1), 128-32. https://doi:10.1016/j.psychres.2010.08.018

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Research Article

The Mediating Role of Spiritual Well-Being in the Relationship between Love of Life and General Psychological Health

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Abstract
Psychological health and love of life are topics that directly affect the subjective world. In this study, spiritual well-being is included in the relationship between these concepts, and the extent to which people's inner/spiritual aspects positively affect their lives is within the scope of the research. The main purpose of this study is to examine the mediating role of spiritual well-being in the relationship between love of life and the general psychological health of individuals between the ages of 18-65. The research was designed by the Relational Screen Model. Hayes' PROCESS Model was used to test the model's accuracy established between dependent, independent and mediating variables. The study group of the research consists of 329 people living in various provinces of Turkey. The mediation analysis revealed that spiritual well-being partially mediated the relationship between love of life and general psychological health. Psychological health is of great importance for the individual and society. One of the most fundamental dimensions of a peaceful and healthy society is the efficiency of individuals' communication with themselves. It is thought that general psychological health and love of life will open a new door on the path to happiness for the individual.

Keywords:
General Psychological Health • Love of Life • Mediation Analysis • Spiritual Well-Being

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Introduction

Psychological health is a factor that has a significant direct impact on a person's life. One of the important concepts affecting the level of this variable, which is seen to be dependent on many factors, is love of life. Spirituality is one of the important forces that people turn to in the face of events that negatively affect psychological health. It is seen that the connection between these three variables is not directly addressed. As a science, psychology is an ongoing approach to making sense of these adverse events experienced by individuals and to offer new perspectives and solutions. Psychological health is one of the basic life needs of human beings. Achieving total psychological health depends on the combination of many factors. One of the factors affecting psychological health is the individual's perspective on life. The individual's communication with their environment and relationship with their inner world constitute the dimensions of psychological health.

The frequent study of psychological health is due to its relationship with so many variables. In this study, its relationship with a general concept such as love of life was examined and it was investigated how the result would change if a new variable was added to this relationship. The existence of scientific literature in the field of psychology in which human beings are mentioned may vary according to historical/sociological phenomena. In the case of mental health, a recent historical phenomenon is an example. World War II can be cited as an example of phenomenon in recent history. In the post-war period, when the scientific perspective changed, the science of psychology focused mainly on disorders and the elimination of adverse situations. During and after the same period, mental health became a significant public health problem worldwide. Mental disorders are often comorbid with various medical conditions (Miller et al., 2006) for example, depressive symptoms (Rajan et al., 2020). Today, human subjectivity and well-being are the subject of many studies. The fact that positive psychology has become widespread but does not address the relationship between psychological health and love of life creates an important need in the field. The inclusion of spiritual well-being in this relationship will pave the way for the research to form new questions.

Moreover, mental disorders can lead to other social problems, such as loss of productivity at work, suicide or criminal behavior. Thus, mental disorders pose a significant burden on individuals and society (Gottfried & Christopher, 2017; Lépine & Briley, 2011). Mental health problems can have negative economic and social consequences, so early identification of these problems among individuals can provide significant benefits; however, it is sometimes not easy to achieve this goal as there is no clear and precise definition of mental health. Traumatic situations after World War II, which created a crisis all over the world, led to the emergence of interventions that required urgency (Keyes, 2002). Positive Psychology, one of these intervention tools,

emphasizes the importance of the individual reaching their potential, discovering their strengths and making their well-being sustainable. Focusing on this branch of psychology aims to highlight positive traits in the individual's life, such as happiness, hope, optimism, and satisfaction with life (Sillick & Cathcart, 2014). In recent years, the great importance attached to the health of individuals, as well as the strong impact of mental and physical illnesses on daily activities and behaviors, has led to the development of quality of life in medical and social research.

Today, psychological health is defined as developing one's state of mind into an optimal state within the scope of maintaining physical, mental, and emotional adaptation with others (Sun et al., 2020; Cohen & Wills, 1985). Empirical findings show that there are various factors affecting psychological health. Anxiety and depression are the main indicators of poor psychological health (Walsh et al., 2017) whereas psychological capitals such as hope and resilience can facilitate better psychological and mental health (Hammond, 2004). Theories and theories that offer perspectives on individuals' psychological health state that physical and mental health are necessary for general psychological health (Ekşi et al., 2019). Psychological health is a critical component that contributes to overall well-being. The World Health Organization (WHO) defines mental health as a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective skills to make decisions, build relationships and shape the world we live in. Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress and potentially very different social and clinical outcomes (WHO, 2022).

One of the factors that cause mental health to change as a result of subjective experiences is the perspective on life. Therefore, this study, another variable that impacts psychological health is love of life. Although it has similarities with the concept of life satisfaction, love of life emphasizes the enjoyment of life and the belief that life is valuable and that everything about life should be embraced (Turan et al., 2022). Love of life, which has emerged as a new concept, meets the happy attachment to life, comprehension of many life-related experiences and satisfaction towards it. Love of life has been considered as one of the new ingredients in the individual evaluation of well-being (Abdel-Khalek, 2004). Love of life carries a continuum as a concept. At one end of this continuum, there is love for life and at the other end, there is hatred for life. Negative feelings towards life can lead to self-harm. Subjective well-being, the basic concept of positive psychology, and love of life intersect, especially in happiness. While love of life corresponds to a positive relationship towards life in general, happiness refers to the enjoyment of life (Abdel-

Khalek & El-Nayal, 2018). Love of life refers to positive attitudes toward one's life (Abdel-Khalek, 2007). Although love of life is mainly associated with positive emotions, it is actually a different and special dimension (Abdel-Khalek, 2013; Abdel-Khalek & Lester, 2011; Dadfar et al., 2020; Dadfar et al., 2017). While love of life is considered one of the main dimensions of well-being, it is also negatively associated with anxiety, death wish, and depression.

The main element of psychology is the human being. The concept that studies existence and makes significant references to it is spirituality. Spirituality responds to questions about human existence within certain limits. Spirituality is important for human beings to be spiritually healthy and sound. Therefore, spiritual well-being is one of the topics that psychology investigates. Spirituality has influenced human societies at an abstract and concrete level since their existence. This effect is also found in different cultures and beliefs (Helminiak, 2001). In other words, spirituality continues as a universal denominator (Ekşi et al., 2019). Spirituality is of Arabic origin and its English equivalent is "spiritual" (Red House, 2023). Although spirituality is known as representing a religious belief, an individual's spirituality is highly influenced by the society in which he/she lives. In the literature, religion, anxiety, hope and a sense of belonging are defined as dimensions of spirituality (Gaskin-Wasson et al., 2018; González-Sanguino et al., 2020).

Moreover, spirituality is an effort to accept and understand one's relationship with others, one's place in the universe and the life one has. It is stated that spiritual beliefs and values are not only limited to divine powers but also include experiences such as health, illness, death and life after death (Cimete, 2002). Considering the multicultural structure of the world, spirituality is separate from all dimensions of beliefs, values and humanism. Spiritual well-being, which is directly related to spirituality, is one of the most fundamental dimensions of the individual's inner world. People communicate with themselves just as they are in a relationship with others. Spiritual well-being includes components related to life and faith that examine the individual's communication with their essence, loved ones and transcendent/supreme power. Spiritual well-being is divided into two different dimensions. The first of these dimensions is called the existential dimension, which deals with the individual's communication with themselves and their environment. The second dimension deals with the communication between the individual and God, a supreme power, which is the religious dimension. The fulfillment and satisfaction of one's needs in the internal, external and religious dimensions are essential (Moberg, 1984). Spiritual well-being, which describes the person's well-being in religious and existential dimensions, mainly depends on the subjective evaluation of the relationship established with life (Hill, 2000). Spiritual well-being is based on positive engagement in one's relationship with oneself, the environment, and others. Ellison (1983), who deals with spiritual well-

being on two different planes, refers to the individual's relationship with a supreme/divine power in the vertical dimension, while in the horizontal dimension, it refers to the interaction and satisfaction with one's life. Moberg (1984) supports this view but redefines the vertical dimension as the religious dimension and the horizontal dimension as the existential dimension. The horizontal dimension, or existential well-being, refers to one's sense of purpose and fulfillment (Ellison, 1983). The vertical dimension, or religious well-being, refers to the individual's relationship with God or another higher power (Edmondson & Lei, 2014).

Positive psychology prioritizes positive experiences in an individual's life and attaches importance to people's ability to maintain their functionality in life. There may always be experiences that will prevent the individual from sustaining their general psychological health and love of life. Positive psychology is scientifically equipped to help people cope with these and similar negative experiences. In positive psychology, which conveys how to better cope with negative experiences, individuals cannot achieve psychological health and love for life only through their inner world. From the perspective of positive psychology, individuals should develop themselves as a whole and especially discover their positive/strong sides. The positive psychology school is an approach that focuses on strengthening the bond with life, prioritizing the individual's creation of experiences around meaning and including positive expressions in terms of language/meaning (happiness, well-being, spirituality, solution, etc.) instead of negative concepts (anxiety, fear, depression, disorder, etc.). Within the scope of the research, general psychological health, love of life and spiritual well-being of individuals will be addressed based on this positive approach. When the characteristics measured by the variables are considered, it is seen that they address the individual's strengths. By examining these three variables with the help of mediation analysis, it is predicted that it will create a unique area in the literature and can be used as research that readers will benefit from.

In summary, psychological health is important for the individual and society. One of the most fundamental dimensions of a peaceful and healthy society is the efficiency of individuals' communication with themselves. It is thought that general psychological health and love of life will open a new door for individuals on their journey to happiness. It has been observed that there is no study on the relationship between these three variables in Turkey. For this reason, it is aimed to examine the mediating role of spiritual well-being in the relationship between general psychological health and love of life. It is thought that the findings obtained will shed light on other studies, especially on spiritual counseling and play a role in understanding the concepts. The hypotheses of the research are given below:

1. There is a significant relationship between love of life and general psychological health.
2. There is a significant relationship between love of life and spiritual well-being.
3. There is a significant relationship between general psychological health and spiritual well-being.
4. There is a mediating role of spiritual well-being in the relationship between love of life and general psychological health.
5. Love of life, general psychological health and spiritual well-being levels of adult individuals show a significant difference according to gender.

Method

Research Design

This research is a relational screen model study to examine the mediating role of spiritual well-being in the relationship between love of life and general psychological health. This relational screen model is a statistical technique that examines the relational status, level, and effect between two or more variables. The main thing in the model is to investigate the relationship between variables without any manipulation (Creswell, 2013; Fraenkel et al., 2012). In the study, love of life was used as the independent variable, general psychological health as the dependent variable and spiritual well-being as the mediating variable.

Participants

The participants consists of individuals between the ages of 18-65. In scientific studies, it is usually complicated to reach the whole population. In such cases, participants can be determined suitable for the research. Convenience sampling is a non-random sampling method in which the researcher judges the sample segment selected from the main mass. This method, known as convenience sampling, determines a group of people suitable for the study. The most crucial benefit of this sampling method is the easy accessibility of the participants by the researcher (Fraenkel et al., 2012). In the convenience sampling method, people who are generally easy to reach and get geographically within a certain period are included voluntarily (Gravetter & Forzano, 2008). The sample size was found to be n = 329 using a ± 5% sampling error at a 95% confidence interval for a non-homogeneous population. To increase the representativeness of the sample group and to take into account the possibility of missing data, data were obtained from 356 people. No erroneous or missing data were observed during the data evaluation process. Within the scope of Z score analysis and normality studies, 27 participants were excluded from

the data set due to outlier detection. Data analysis was conducted with the remaining 329 participants.

Measurements

In the study, the Personal Information Form prepared by the researcher was used to obtain the sociodemographic information of the individuals. The Love of Life Scale (Turan et al., 2022) was used to examine the participants' love of life level, the General Health Questionnaire (Kılıç et al., 1997) was used to investigate the general psychological health level, and the Spiritual Well-Being Scale (Aktürk et al., 2017) was used to examine the level of spiritual well-being.

Personal information form. To better describe the participants in the study, a Personal Information Form was used to measure the demographic characteristics of the individuals. This form was prepared by the researcher.

General health questionnaire. It is a tool developed by Goldberg (1972, 1978) and used by patients to identify disorders, especially in primary care. The scale was first developed as a 60-question form, then shorter forms of 30, 28 and 12 questions were developed. As a result of the analysis, each form was valid and reliable. As the score in the questionnaire increases, mental health worsens and the likelihood of psychiatric disorders is increased. Values obtained with GSA-type scoring indicate risk groups. Scores on 12 items are grouped as low, medium and high. Those who score less than 2 points on the scale are grouped as low, those who score between 2-3 points are grouped as medium and those who score 4 or more points are grouped as high. The General Health Questionnaire used in this study includes 12 questions. Each question consists of 4 options: never - as often as usual - more often than usual - very often. Participant responses can be scored on a Likert-type scale (0-1-2-3), or as suggested by Goldberg, the first two options can be marked as (0-0) and the responses to the other two options as (1-1). The reliability value of the scale was found to be .70. The validity value of the scale was found to be .74. In this study, the (0-0-1-1) options recommended for GHQ (General Health Questionnaire) were preferred. Turkish validity and reliability study was conducted by Kılıç (1996). The sensitivity and specificity of the GHQ-12 were calculated as 0.74 and 0.84, respectively, and the recommended cut-off point for patients presenting to the health center with any physical complaint was 1/2 (Kılıç, 1996). The 12-question short form of the questionnaire was used in the study.

Love of life scale. The Turkish validity and reliability studies of the Life Love Scale (LLS) developed by Abdel-Khalek (2007, 2013, 2020) were conducted by Turan et al. (2022). The scale is a 16-item self-report scale measuring the concept of love of life. Each item is answered on a five-point Likert-type scale: Not at all

(1), A little (2), Moderately (3), Very much (4) and Very much (5). All items are marked positively. The total scale score can range from 16 (strongly disagree with all items) to 80 (strongly agree with all items). High scores indicate high love of life. The reliability value of the scale was found to be .91. The validity value of the scale was found to be .81. The LLS was initially developed in Arabic and has English and Persian versions. It was administered to university students from Algeria, Egypt, India, Iran, Kuwait, Kuwait, Lebanon, Malaysia, Palestine, Qatar, and the United States (Abdel-Khalek, 2007; Abdel-Khalek & El-Nayal, 2018; Abdel-Khalek & Lester, 2011; Abdel-Khalek & Zine El-Abiddine, 2019; Turan et al, 2022; Al-Arja, 2018; Atef Vahid et al., 2016) and individuals and groups at the clinical level (Dadfar et al., 2020; Dadfar et al., 2021). In Abdel-Khalek's (2007) study, the LOL (Love of Life) had high internal consistency (Cronbach $\alpha = .91$) and test-retest reliability ($r = .81$). The reliability value of the Turkish form was found to be .95.

Spiritual well-being scale. The Spiritual Well-Being scale was developed by Peterman et al. (2002) to measure the spiritual well-being levels of patients with chronic illness and cancer patients. Aktürk et al. (2017) conducted the Turkish validity and reliability study. The scale consists of 12 items and is a 5-point Likert-type measurement tool. The scale items have a scoring system between 0 and 4 and the score that can be obtained from the scale varies between 0-48. As a result of the analysis, it was seen that the 4th and 8th items in the scale were reversed items. The scale has three sub-dimensions: meaning (items 2, 3, 5, 8), peace (items 1, 4, 6, 7) and belief (items 9, 10, 11, 12). As the score obtained from the scale increases, spiritual well-being increases. Aktürk et al. (2017) conducted a Turkish validity and reliability study; the total Cronbach Alpha value of the scale was calculated as 0.87, the meaning sub-dimension as 0.78, the peace sub-dimension as 0.81 and the belief sub-dimension as 0.93.

Procedure

The necessary ethics committee permission was obtained from XX University Institute of Educational Sciences to collect the research data. Data were collected from individuals in Türkiye during the 2022-2023 academic year. The research is based on volunteerism and data were obtained with the support of online platforms. The purpose of the study, the principles of voluntariness and confidentiality, and researcher information were included on the first page of the data collection form. Regarding privacy, the form did not have questions about participants' identity information. In addition, a tab box confirming voluntary participation was included in the form. The other pages included the Personal Information Form, Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale.

Data Analysis

First, the data's normality distribution was tested by examining the kurtosis and skewness coefficients. Skewness values between -1 and +1 indicate a normal distribution (Hair et al., 2014). The kurtosis and skewness values of the data were found to be normally distributed (between -1 and +1 values). Independent Group t Test was conducted to examine whether the Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale of adult individuals differed according to gender. Then, to apply the regression model, there should be no multicollinearity problem in the data set. For this reason, Pearson Product Moment Correlation analysis was used to examine the multicollinearity and the relationships between variables before mediation analysis. The correlation coefficient between variables above .80 indicates that there may be a multicollinearity problem (Büyüköztürk, 2013). In the findings, a value of .80 and above was not reached. To test the mediating role of spiritual well-being in the relationship between love of life and general psychological health, which is the primary purpose of the study, mediation analysis was performed with regression analysis based on the Bootstrap method. Bootstrap technique obtains new sets of observations by creating different combinations in the data set and uses these sets in calculations (Efron, 1987). In the bootstrap analysis, the significance of the mediation effect is tested by examining the bias-corrected and accelerated confidence interval values (BCA CI: Bias Corrected and Accelerated Bootstrap Confidence Interval) at 95% confidence interval. For the indirect effect (ab), if there is no zero (0) value between the lower and upper confidence interval values, the indirect effect is significant and the mediation effect is observed (Hayes & Scharkow, 2013).

PROCESS Macro conditional process analysis, which was developed by Hayes (2012) and can be installed as an add-on to the SPSS program, was used to determine the mediating role of spiritual well-being. Bootstrap technique examines bootstrap bias at the corrected confidence interval (Preacher & Hayes, 2008). The mediation effect in the research model was examined using Multiple Mediation Model 4 with a 95% confidence interval on 5000 bootstrap samples. According to Baron & Kenny (1986), in a simple mediation model, there are predicted paths "a" "b" and "c" and they are called direct/indirect effects. The research model states that X has a direct effect on the mediating variable (M) and the mediating variable has a direct effect on the outcome variable (Y). It is also assumed that X has a direct effect on Y. The mediation effect is evidenced when there is evidence that the indirect Effect of X on Y flows through M. The Indirect Effect (IE=Indirect Effect) in this model is calculated as the product of paths "a" and "b": I.E. = a * b. In addition, the total Effect of X on Y is simply expressed as the sum of all direct (DE=Direct Effect) and indirect effects from X to Y. In the simple model, the total Effect of X on Y is D.E. + I.E. = c + a * b (Baron & Kenny, 1986).

Results

In this part of the study, statistical findings related to the scores of the Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale are given.

Tablo 1
Arithmetic Mean, Standard Deviation, Standard Error, Kurtosis and Skewness Values of Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale Scores (n=329)

Point (n=329)	$\bar{X}$	*sd*	*Sh$\bar{x}$*	*Min.*	*Max.*	*Skewness*	*Kurtosis*
Love of Life	13,70	3,71	,205	4	20	-,38	-,18
General Psychological Health	3,34	3,51	,194	0	12	,92	-,32
Spiritual Well-Being	29,07	9,29	,512	1	48	-,68	,08

The table shows the mean, standard deviation, standard error, and minimum and maximum values of the Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale scores. As seen in Table 1, the arithmetic mean $\bar{x}$= 13,70, standard deviation (sd) =3,71, standard error (se)= ,205, minimum value= 4 and maximum value= 20, kurtosis= -,18 skewness= -,38. The arithmetic mean of general psychological health scores was found as $\bar{x}$ = 3,34, standard deviation (sd) = 3,51, standard error (se)=,194, minimum value= 0 and maximum value= 12, kurtosis= -,32, skewness=,92. The arithmetic mean of spiritual well-being scores was found as $\bar{x}$ = 29,07, standard deviation (sd)= 9,29, standard error (se)=,512, minimum value= 1 and maximum value= 48, kurtosis value=,08 and skewness value= -,68.

Descriptive methods are the most frequently used to test the normality assumption. In this study, as a result of the descriptive statistics, it was seen that the data were normally distributed. Thus, the analyses related to parametric tests were carried out.

The table below shows the findings on whether the study variables, Love of Life, General Psychological Health and Spiritual Well-Being, differ significantly according to gender.

Table 2
Independent Group t Test Results to Determine Whether the Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale Differentiate According to Gender

						t-test		
Points	*Groups*	*N*	$\bar{X}$	*ss*	*Sh$\bar{x}$*	*t*	*sd.*	*p*
General Psychological Health	Man	103	,30	,31	,03	,90	329	,36
	Woman	226	,27	,28	,01			
Love of Life	Man	103	3,30	,93	,09	-1,65	329	,09
	Woman	226	3,48	,92	,06			
Spiritual Well-Being	Man	103	2,36	,75	,07	-,85	329	,39
	Woman	226	2,44	,78	,05			

As seen in Table 2, according to the results of the Independent Group t-test analysis conducted to examine whether the scores of Love of Life, General Psychological Health and Spiritual Well-Being of the individuals in the sample differ significantly according to gender variable, no significant difference was found in the General

Health Questionnaire scores according to gender variable (t=,90; p>,05). There was no significant difference in Love of Life Scale scores according to gender variable (t=-1,65; p>,05). No significant difference was found in Spiritual Well-Being Scale scores according to gender variable (t=-,85; p>,05).

The findings of the relationship between the Love of Life, General Psychological Health and Spiritual Well-Being scores obtained as a result of Pearson Correlation Analysis of the research are given.

Table 3
Pearson Product-Moment Correlation Analysis Results for the Relationship between the Scores of Love of Life Scale, General Health Questionnaire and Spiritual Well-Being Scale

Variables	*1*	*2*	*3*
Love of Life	1		
General Psychological Health	-,57**	1	
Spiritual Well Being	,77**	-,65**	1

**p<,01

As seen in Table 3, as a result of the Pearson Product Moment Correlation Analysis conducted to examine whether there is a significant relationship between love of life, general psychological health and spiritual well-being scores, it was found that there was a significant negative relationship between love of life and general psychological health variables (r=-,57; p < .001), a significant positive relationship between love of life and spiritual well-being variables (r=,77; p < .001) and a significant negative relationship between general psychological health and spiritual well-being variables (r=-,65; p < .001). For the analysis of the mediation model, there should be a significant correlation between the independent, dependent and mediator variables (Baron & Kenny, 1986). It is seen that the research variables have moderately significant relationships and this assumption is met.

Table 4
Effects between Love of Life, General Psychological Health and Spiritual Well-Being

					%95 Confidence Interval		
Relations Between Variables	*B*	*S.H.*	*t*	*P*	*Lower Limit*	*Upper Limit*	R^2
Total effect (*c*)	-,1825**	,0142	-12,8367	,0000	-,2104	-,1545	,3351
Love of Life→ Spiritual Well-Being (a)	,6457**	,0291	22,1829	,0000	,5885	,7030	,6008
Love of Life → General Psychological Health (c')	-,1825**	,0142	-12,836	,0000	-,2104	-,1545	,3351
Spiritual Well-Being → General Psychological Health (b)	-,1938**	,0142	-12,8367	,0000	-,2104	-,1545	,3351

B: Unstandardized Regression Coefficient, S. H: Standard Error,
**p<.00, n=329, k=5000 Bootstrap Sample
R2: Variance Value, t: Degrees of Freedom

In the single mediation model, which is the study's main hypothesis, the results of the mediation role analysis of the spiritual well-being variable in the effect of love of life levels on general psychological health levels by the Bootstrap method are given in Table 4.

According to the total effect (c path) analysis, which is the effect of the independent variable on the dependent variable in the model without mediating variable in Table 4, love of life significantly predicts general psychological health negatively (B = -.1825, 95% CI [.2104; .1545], t: -12.8367, p<.001). The statistical significance of the beta value was determined by the fact that the p-value and the lower and upper limits of the confidence interval had the same sign. According to the variance value, the love of life variable explains the general psychological health variable by approximately 33% (R^2 =.3351).

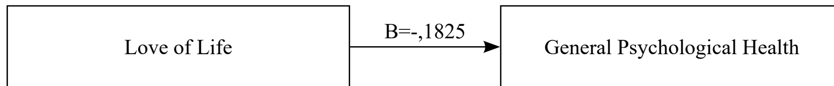
According to the analysis of the effect of the independent variable on the mediating variable (path a) in Table 4, love of life significantly predicts spiritual well-being in a positive direction (B = .6457, 95% CI [.5885; .7030], t: 22.1829, p<.001). The statistical significance of the beta value was determined by the fact that the p-value and the lower and upper limits of the confidence interval had the same sign. According to the variance value, the love of life variable explains the spiritual well-being variable by approximately 60% (R^2 =.6008).

According to the analysis of the effect of the mediating variable on the dependent variable (path b) in Table 4, spiritual well-being significantly predicts the level of general psychological health negatively (B = -.1938, 95% CI [-.2104; -.1545], t: -12.8367, p<.001). In the model with the mediating variable, according to the analysis of the effect of the independent variable on the dependent variable (c' path), the level of love of life significantly predicts the level of general psychological health in a negative direction (B = -.1825, 95% CI [-.2104; -.1545], t: -12,8367, p<.001). The statistical significance of the beta value was determined by the fact that the p-value and the lower and upper limits of the confidence interval had the same sign. According to the variance value, love of life and general psychological health explain about 33% (R^2 = 3351) of the variance in spiritual well-being.

Figure 1 shows the model and unstandardized regression coefficients (B) for the direct effect of love of life on general psychological health and the indirect effect of spiritual well-being as a mediator in the relationship between love of life and general psychological health.

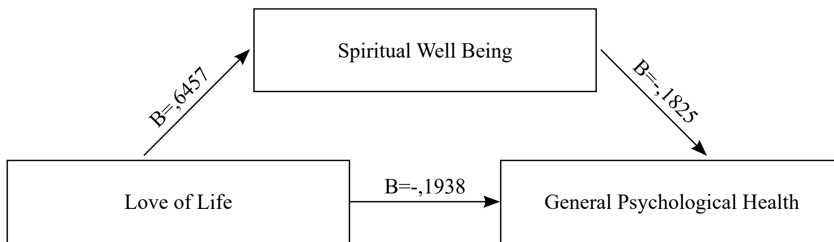
Figure 1.
The Mediating Role of Spiritual Well-Being in the Relationship between Love of Life and General Psychological Health

a) Direct Effect



**** p <,001**

b) Indirect Effect



****p <,001**

In the research model in Figure 1, love of life has a significant indirect effect (ab) on general psychological health through spiritual well-being and spiritual well-being mediates this relationship (B= -.1938) (BCA CI= Bias Corrected and Accelerated Bootstrap Confidence Interval). The indirect effect value (-.1825) means that the love of life level of one of the participants is one unit higher than the others, and the general psychological health is -.1825 higher. The research shows that higher love of life predicts higher spiritual well-being and lower general psychological health.

Table 5
Bootstrap-Based Single Mediating Variable Effect

Relationship Mediated by Spiritual Well-Being	*Total Effect*	*Direct Effect*	*Indirect Effect*	*Bootstrap Confidence Interval BoLLCI – BoULCI*	*Mediator Effect Type*
General Psychological Health - Love of Life	-,1825	-,0573	-,1252	-,2104 with -,1545	Partial

Table 5 shows the Bootstrap-based effect size values of the participants' spiritual well-being mediator variable. The initial effect of -.18 between love of life and general psychological health decreases to -.05 with the inclusion of the mediating variable in the model and maintains its significance. This shows that spiritual well-being partially mediates the relationship between love of life and general psychological health. This result supports the research hypothesis.

Discussion

In this section, the findings showing the relationship between the levels of love of life, general psychological health and spiritual well-being with gender variable and the mediating role of spiritual well-being in the relationship between love of life and general psychological health variables were examined and discussed in the light of the relevant literature.

When our research results on the general psychological health variable were examined, no significant difference was found in the participants' general psychological health levels according to gender. When the literature is reviewed, in the study of Elkin and Barut (2017), it was stated that there was no statistical significance between the gender status of the participants and their general health levels. In studies conducted by Özdemir and Rezaki (2007) and Özkan et al. (2013), a significant difference between genders was found and this difference was found to be in favor of women. The literature shows that women have a higher risk of mental illness than men (Varcolis, 1998; Okyay et al., 2012). Women's mean total general health questionnaire score was higher than men's (El-Metwally et al., 2018). Male students showed more depressive and obsessive-compulsive symptoms compared to female students (Buizza et al., 2022). In addition, other studies have reported that women have higher general psychological health scores and thus a higher risk of mental illness than men (Kelleci et al., 2003; Belek, 1999; Özkan et al., 2013; Varcolis, 1998; Okyay et al., 2012). The fact that women have higher general health scores compared to men can be evaluated both culturally and by many studies, especially depression, which is more common in women. The fact that women experience more emotional disturbances such as depression and anxiety may help to understand the gender differences in the scores given to the general health questionnaire.

According to the research on the love of life variable, individuals' love of life levels does not significantly differ according to gender. When the related literature is examined, similar to the study results in the study of Dadfar et al. (2020), no significant difference was found in gender scores between men and women. The study findings of Dadfar et al. (2021) showed no significant gender-related difference in love of life, but women's physical and mental health scores were higher than men's. In a study conducted in countries with different demographic structures, Egypt, Algeria, Kuwait, Lebanon, Iran, India, Qatar, Malaysia and the USA, the only gender differences were found in Kuwait (in favor of men) and India (in favor of women). Among men, the highest mean love of life scores were found in the Qatar, India and Kuwait samples. In contrast, the highest mean love of life scores among women were found in the India, Iran, Qatar and Algeria samples, respectively. On the other hand, the lowest mean love of life scores were found in Egypt and Lebanon (men) and Egypt (women) samples. In contrast, another study found no significant gender-based

difference in love of life (Abdel-Khalek & El Nayal, 2018). Abdel-Khalek & Singh (2019) found that Kuwaiti males achieved a significantly higher mean total score on love of life than their female peers, while Indian females achieved a higher mean total score on love of life than their male peers. In both studies, there were no significant statistical differences between males and females in terms of total rating. Concerning gender-related differences in love of life, some studies contradict previous studies. A study on Indian university students showed that women scored higher on the love of life scale (Abdel-Khalek & Singh, 2019). In a study of university students in Egypt, Algeria, Kuwait, Lebanon, Kuwait, Lebanon, Iran, India and Turkey, love of life scores was higher for women in each country. The difference between the total love of life scale score for all males and all females was statistically significant. The results showed that women had higher mean scores than men in each country. Moreover, the difference between the total mean score of love of life between all men and all women was statistically significant in favor of women (Abdel-Khalek et al., 2022). In a study conducted by Abdel-Khalek (2013) on Kuwaiti and Lebanese citizens, it was found that when love of life scores were examined, there was a statistically significant difference between the mean scores of men and women and this difference was found to be in favor of women. In a study conducted by Al-Arja (2018), statistically significant differences in the gender variable were found to be in favor of women. The existence of different results regarding the love of life can be evaluated through the perspectives of the culture in which the sample in the study is located towards gender. The existence of social structure and its emphasis on the differences between genders can be considered as an indicator of the codes that are effective on the men and women of that country.

When the research findings related to the variable of spiritual well-being were examined, it was found that the spiritual well-being levels of the participants did not show a significant difference according to gender. When the relevant literature is reviewed, in another study conducted with 451 cancer patients from 14 different countries, women's scores were higher than those obtained from the spiritual well-being scale (Rohde et al., 2019). In Lee & Salman's (2019) study, women scored higher than men in all areas of the spiritual well-being scale. In Miller's (2003) study, women stated that spirituality is a primary and standard component of their lives. Women have higher mean scores on spirituality than men (Abdel-Khalek, 2006; Spilka et al., 2003; Sullins, 2006). Social order, life expectations, various roles attributed to women and coping strategies can be shown as the reason gender creates differences in spiritual well-being. In the study conducted by Frey et al. (2005), there was no significant difference in the scores obtained from the spiritual well-being scale in the gender variable. Ziapour et al. (2017) conducted a study on 346 doctoral students studying in the faculties of dentistry, medicine and pharmacology. As a result of the independent t-test, no significant difference was found between the mean score of spiritual well-being and gender.

The prerequisite for a person to be satisfied with his/her life and happy due to his/her experiences is to be psychologically healthy. In the early years of life, when one is not yet in control of one's own life and is therefore dependent on caregivers for self-care and self-compassion, psychological health depends on the self-sacrifice of the other. As life progresses, one's awareness of oneself and the world grows and one can control one's life, or at least hope to be able to control it. In this process of control, psychological health is often influenced by the outcome of one's lifestyle and choices. Being consciously aware of one's feelings, thoughts and actions affects both one's mental health and physical health, especially through the impact of one's actions. In the positive school of psychology, which embraces the unity of mind and body, general psychological health represents the mental dimension of this unity. This representation makes it possible to receive a "standing diagnosis" thanks to a measurement tool that can evaluate oneself rather than complex diagnostic processes. A person's general psychological health is most evident in the consistency and effectiveness of communication and interaction with oneself. The technological developments of our post-modern age sometimes disrupt the quality of this relationship. In line with the increasing importance of social welfare and development goals, not only the relationship of individuals with themselves but also their interaction with all universal values, starting from the closest ones, comes to the fore. One of the most emphasized concepts of post-modernity is universality. We can see the importance of this universality at the root of many psychological disorders. Unsatisfied satisfaction in relationships and inadequate interpersonal interaction can be shown as the common reason why anxiety and depression are the most common disorders today. Anxiety/depression is an important sub-dimension of a person's psychological health. The origin of these psychological disorders may stem from the person himself/herself or from the way he/she experiences life and the breadth of perspectives towards life. At this point, the capacity of individuals to love life emerges. The existence of this capacity may have a regulating effect on the general psychological structure of the person, and a positive level of general psychological health may also contribute to the person's love of life. The interaction of these two concepts has not been addressed in a general framework. Still, concepts such as psychological health, loving life and being satisfied with life have been frequently included in research.

As a prerequisite for mediation analysis, there is a relationship between the variables. Many studies consider love of life and general psychological health in an inverse relationship. In this study, a negative relationship was found between both variables. In this relationship, the less psychological distress the person has or the less frequently he/she experiences these distresses, the higher the level of love of life. The situation we often encounter in daily life is that a person's being in a healthy structure can give an important signal that he/she can love life. Here, we can also talk about reciprocal relationality. Loving life can also heal a person. Love of life is not just a feeling that arises in a person due to a single experience, but embracing life in

its entirety and continuity. At one end of this continuum is love and at the other end is lovelessness. The variable that most determines the person's position in this two-ended line is the state of psychological health. A psychologically healthy person can communicate adequately and effectively with oneself and others when necessary to make self-awareness a part of life and to have positive feelings towards life.

General psychological health directly affects a person's living arrangements. This direct effect is evaluated according to the negative correlation between both variables. As the general psychological health score increases, the level of spiritual well-being decreases. Although spiritual well-being is often associated with having any religious belief, the effect of any religion is not considered here, as it is also included in the studies of some psychoanalysts such as Jung. What is mainly considered here is the person's belief in a higher, powerful and abstract being. It can be said that people with spiritual well-being are psychologically and physically healthy and adapt to the social order. Psychological health is seen as one of the indicators of this harmony, and spiritual well-being intersects at this point. The fact that individuals' beliefs can positively affect their life order depends on their feelings and thoughts and their compliance with the social rules they are in. Psychological health is seen as a strong component that directly affects every meaning of life, and this effect directly affects the person's spirituality, which has an internal impact on his/her worldly journey. The unshakable foundation of the belief that an individual will feel good and be happy lies in being psychologically healthy. While many aspects of well-being are discussed in the literature, spirituality has also been extensively researched (de Brito Sena et al., 2021; Balboni et al., 2022; Paul Victor et al., 2020; Rocha & Pinheiro, 2021; Bożeket al., 2020). In the discussion part of this study, the relationship between spirituality and health status was discussed and it was seen that this relationship affects the individual's level of well-being.

Spiritual well-being also correlates with the study's independent variable, general psychological health. Spiritual well-being involves the process of seeking the truth and realizing the meaning of life through internal processes beyond social rules. Spirituality positively affects mental health by providing self-efficacy and social support (George et al., 2002). In health services, spiritual care and religion are considered effective in reducing anxiety and maintaining/increasing one's health capacity (Rias et al., 2020). Spirituality has significantly contributed to protecting people's intrinsic motivation during a pandemic where social support is very low (Sharif Nia et al., 2021). This contribution protected mental health, prevented damage, and enabled people to have hope for the future and to love life. In conclusion, similar studies support the research's mediation hypothesis and it has been proven that spiritual well-being mediates the relationship between general psychological health and love of life.

Finally, when the mediating role of spiritual well-being, which is the mediating variable of the study, in the relationship between love of life and general psychological health variables, was examined, it was seen that spiritual well-being mediated the relationship between love of life and general psychological health in adult individuals. In mediation analysis, a mediating variable partially affects the relationship between two variables. The presence of this variable may decrease or increase the level of the relationship between dependent and independent variables. In this study, spiritual well-being, included as a mediating variable, shows a partial mediation effect. In the correlational method, a decrease in the level of general psychological health leads to an increase in spiritual well-being, and an increase in spiritual well-being leads to an increase in the level of love of life in adult individuals. In the literature, there is no study in which these three variables are discussed in the research context. However, the research results will be discussed with possible similar studies.

Some suggestions can be made in the context of the results obtained. During the research, it was observed that no one had examined all three variables of love of life, general psychological health and spiritual well-being together. Therefore, the sample is thought to contribute to the literature of different and new studies, including all variables. The demographic variables in the current study do not include the trauma history of the individual. For this reason, the questions about individual trauma history and the type of trauma experienced can be included in the scope of the study. General psychological health, love of life and spiritual well-being levels of adult individuals were examined within the size of the quantitative method. Qualitative or mixed methods can be used to explore the research question more deeply. New studies can be included in the literature on the relationship between love of life, which is the study's dependent variable, and demographic variables such as age and economic status. It is thought that the research will be a leading study in the field and research studies that will include different results including mediation analysis related to variables are recommended.

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Ethical Approval. All procedures were conducted in accordance with the ethical standards of University Educational Sciences Ethics Board (Meeting Number: 2023/03, Approval Date: 10.03.2023) and with the 1964 Declaration of Helsinki and its subsequent amendments.

Author Contributions. Both authors jointly determined the aims of the study and the research design. Muhammed Furkan Tunç did a literature review, wrote a literature section, the method, analyzed the data and wrote a discussion. Durmuş Ümmet edited the results and discussion.

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References

Abdel-Khalek, A. M. (2004). *Love of life: A sub-component on the well-being construct: A cross-cultural study* [Conference presentation]. International Cultural Psychiatry Conference, Melbourne, Australia.

Abdel-Khalek, A. M. (2007). Religiosity, happiness, health, and psychopathology in a probability sample of Muslim adolescents. *Mental Health, Religion and Culture, 10*(6), 571-583. https://doi.org/10.1080/13674670601034547

Abdel-Khalek, A. M., & Lester, D. (2011). Love of life in Kuwaiti and American college students. *Psychological Reports, 108*(1), 94-94. https://doi.org/10.2466/07.17.PR0.108.1.94

Abdel-Khalek, A. M. (2013). Love of life and its association with personality dimensions in college students. *The happiness compass: Theories, actions and perspectives for well-being*, 53-65.

Abdel-Khalek, A. M. & El Nayal, M. (2018). Love of life in nine developed and underdeveloped countries. *BAU Journal-Health and Well-being, 1*(3), 57.

Abdel-Khalek, A. M., & Singh, A. P. (2019). Love of life, happiness, and religiosity in Indian college students. *Mental Health, Religion & Culture, 22*(8), 769-778. https://doi.org/10.1080/13674676.2019.1644303

Abdel-Khalek, A. M., & Zine El-Abiddine, F. (2019). Love of life in university students from Algeria. *Journal of Psychological and Educational Sciences, 8*(1), 141-154. https://doi.org/10.1080/13674676.2019.1644303

Aktürk, Ü., Erci, B., & Araz, M. (2017). Functional evaluation of treatment of chronic disease: Validity and reliability of the Turkish version of the Spiritual Well-Being Scale. *Palliative & Supportive Care, 15*(6), 684-692. https://doi.org/10.1017/S1478951517000013

Al-Arja, N. (2018). Love of Life among Palestinian students in the West Bank and its relationship with selected variables. *Psycho-Educational Research Reviews, 7*(2), 30-38.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173. https://doi.org/10.1037/0022-3514.51.6.1173

Belek İ. (1999). Sosyal sınıf, eğitim, gelir ve mahalle: Hangisi sağlığın en önemli belirleyenidir? Antalya'da bir araştırma. *Sosyoloji Araştırmaları Dergisi, 2*(1-2): 49-74.

Büyüköztürk, Ş. (2013). *Sosyal bilimler için veri analizi el kitabı*. Pegem Akademi.

Cimete, G. (2002). Stress factors and coping strategies of parents with children treated by hemodialysis: A qualitative study. *Journal of Pediatric Nursing, 17*(4), 297-306. https://doi.org/10.1053/jpdn.2002.126712

Cohen. S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*, 310-357. https://doi.org/10.1037/0033-2909.98.2.310

Creswell, J. W. (2013). *Steps in conducting a scholarly mixed methods study*.

Dadfar, M., Farid, A. A. A., Lester, D., Vahid, M. K. A., & Birashk, B. (2016). Effectiveness of death education program by methods of didactic, experiential, and 8A model on the reduction of death distress among nurses. *International Journal of Medical Research & Health Sciences, 5*(7), 60-71.

Dadfar, M., Abdel-Khalek, A. M., & Lester, D. (2017). Psychometric characteristics of the Reasons for Death Fear Scale among Iranian nurses. *International Journal of Nursing Sciences, 4*(4), 384-388. https://doi.org/10.1016/j.ijnss.2017.10.002

Dadfar, M., Abdel-Khalek, A. M., & Lester, D. (2020). Love of life and its association with well-being in Iranian psychiatric outpatients. *Nursing Open, 7*(6), 1861-1866. https://doi.org/10.1002/nop2.575

Dadfar, M., Eslami, M., Mohaghegh, F., Lester, D., & Abdel-Khalek, A. M. (2020). Love of life in Iranian clinical and non-clinical groups. *The Mankind Quarterly, 61*(1). https://doi.org/10.46469/mq.2020.61.1.3

Dadfar, M., Gunn III, J. F., Lester, D., & Abdel-Khalek, A. M. (2021). Love of Life Model: Role of psychological well-being, depression, somatic health, and spiritual health. *Mental Health, Religion & Culture, 24*(2), 142-150. https://doi.org/10.1080/13674676.2020.1825360

Diener, E., Suh, E., & Oishi, S. (1997). Recent findings on subjective well-being. *Indian Journal of Clinical Psychology, 24,* 25-41.

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. *Annu. Rev. Organ. Psychol. Organ. Behav., 1*(1), 23-43. https://doi.org/10.1146/annurev-orgpsych-031413-091305

Fraenkel J. R. Wallen N. E. & Hyun H. (2012). *How to design and evaluate research in education (9th ed.)*. McGraw-Hill Humanitie.

Efron, B. (1987). Better bootstrap confidence intervals. *Journal of the American Statistical Association, 82*(397), 171-185. https://doi.org/10.1080/01621459.1987.10478410

Ekşi, H., Özkapu, D. E. ve Ümmet, D. (2019). Üniversite öğrencilerinde psikolojik kırılganlıkla öznel zindelik arasındaki ilişkide genel psikolojik sağlığın aracı rolü. *Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi, 7*(5), 183-190. https://doi.org/10.18506/anemon.526353

El-Metwally, A., Javed, S., Razzak, H. A., Aldossari, K. K., Aldiab, A., Al-Ghamdi, S. H. et al. (2018). The factor structure of the general health questionnaire (GHQ12) in Saudi Arabia. *BMC Health Services Research, 18*, 1-11. https://doi.org/10.1186/s12913-018-3381-6

Elkin, N. ve Barut, A. Y. (2017). Bir aile sağlığı merkezine başvuran bireylerin genel sağlık anketine göre ruhsal durumlarının değerlendirilmesi. *İstanbul Gelişim Üniversitesi Sağlık Bilimleri Dergisi,* (3), 221-238.

Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology, 11*(4), 330-338. https://doi.org/10.1177/009164718301100406

Fraenkel J. R. Wallen N. E. & Hyun H. (2015). How to design and evaluate research in education (9th ed.). McGraw-Hill Humanitie.

Frey, B. B., Daaleman, T. P., & Peyton, V. (2005). Measuring a dimension of spirituality for health research: Validity of the spirituality index of well-being. *Research on Aging, 27*(5), 556-577. https://doi.org/10.1177/0164027505277847

Gaskin-Wasson, A. L., Walker, K. L., Shin, L. J., & Kaslow, N. J. (2018). Spiritual well-being and psychological adjustment: mediated by interpersonal needs?. *Journal of Religion and Health, 57*, 1376-1391. https://doi.org/10.1007/s10943-016-0275-y

George, L. K., Ellison, C. G., & Larson, D. B. (2002). Explaining the relationships between religious involvement and health. *Psychological Inquiry, 13*(3), 190-200. https://doi.org/10.1207/S15327965PLI1303_04

Goldberg, D. P. (1972). *The Detection of Psychiatric Illness Goldberg, by Questionnaire*. Oxford University Press.

Goldberg, D. P. (1978). General Health Questionnaire-12. *Australian Journal of Psychology.*

González-Sanguino, C., Ausín, B., Castellanos, M. Á., Saiz, J., López-Gómez, A., Ugidos, C., & Muñoz, M. (2020). Mental health consequences during the initial stage of the 2020 Coronavirus pandemic (COVID-19) in Spain. *Brain, Behavior, and Immunity*, *87*, 172-176. https://doi.org/10.1016/j.bbi.2020.05.040

Gottfried, E. D., & Christopher, S. C. (2017). Mental disorders among criminal offenders: A review of the literature. *Journal of Correctional Health Care, 23*(3), 336-346. https://doi.org/10.1177/1078345817716180

Gravetter FJ, Forzano L-AB (2008). *Research methods for the behavioural sciences.* Wadsworth.

Hair F. Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review, 26*(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hammond, C. (2004). Impacts of lifelong learning upon emotional resilience, psychological and mental health: Fieldwork evidence. *Oxford Review of Education, 30*(4), 551-568. https://doi.org/10.1080/0305498042000303008

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science, 24*(10), 1918-1927. https://doi.org/10.1177/0956797613480187

Helminiak, D. A. (2001). Treating spiritual issues in secular psychotherapy. *Counseling and Values, 45*(3), 163-189. https://doi.org/10.1002/j.2161-007X.2001.tb00196.x

Hill, J. (2000). A rationale for the integration of spirituality into community psychology. *Journal of Community Psychology*. https://doi.org/10.1002/(SICI)1520-6629(200003)28:2<139::AID-JCOP3>3.0.CO;2-X

Hu, N., Pan, S., Sun, J., Wang, Z., & Mao, H. (2020). Mental health treatment online during the COVID-19 outbreak. *European Archives of Psychiatry and Clinical Neuroscience, 270***,** 783-784. https://doi.org/10.1007/s00406-020-01129-8

Kelleci M., Aştı N. ve Küçük L. (2003). Bir sağlık ocağına başvuran kadınların genel sağlık anketine göre ruhsal durumları. *C.Ü. Hemşirelik Yüksekokulu Dergisi, 7*(2):11-4.

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 207-222. https://doi.org/10.2307/3090197

Kılıç C. (1996). Genel sağlık anketi: Geçerlik ve güvenirlik çalışması. *Türk Psikiyatri Dergisi, 7*(1): 3-9.

Kılıç, C, Rezaki, M, Rezaki, B, Kaplan, I, Ozgen, G.Sagduyu, A.vd. (1997). General Health Questionnaire (GHQ- 12 & GHQ- 28): The scales' psychometric properties and factor structure in a Turkish care sample. *Social Psychiatry and Psychiatric Epidemiology 32*, 327- 331. https://doi.org/10.1007/BF00805437

Lee, E. T., Welty, T. K., Fabsitz, R., Cowan, L. D., Le, N. A., Oopik, A. J. et al. (1990). The strong heart study: A study of cardiovascular disease in American Indians: Design and methods. *American Journal of Epidemiology, 132*(6), 1141-1155. https://doi.org/10.1093/oxfordjournals.aje.a115757

Lépine, J. P., & Briley, M. (2011). The increasing burden of depression. *Neuropsychiatric Disease and Treatment, 7*(1), 3-7. https://doi.org/10.2147/NDT.S19617

Milgram, N. A., & Atzil, M. (1988). Parenting stress in raising autistic children. *Journal of Autism and Developmental Disorders, 18*(3), 415-424. https://doi.org/10.1007/BF02212196

Miller, B. J., Paschall, C. B., & Svendsen, D. P. (2006). Mortality and medical comorbidity among patients with serious mental illness. *Psychiatric Services*, *57*(10), 1482-1487. https://doi.org/10.1176/ps.2006.57.10.1482

Miller, L. J. (Ed.). (2013). *The Oxford handbook of psychology and spirituality.* Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199729920.001.0001

Moberg, D. O. (1984). Subjective measures of spiritual well-being. *Review of Religious Research*, 351-364. https://doi.org/10.2307/3511368

Okyay P, Atasoylu G, Önde M, Dereboy Ç. ve Beşer E. (2012). Kadınlarda yaşam kalitesi anksiyete ve depresyon belirtilerinin varlığında nasıl etkileniyor? Kesitsel bir alan çalışması. *Türk Psikiyatri Dergisi, 23*(3), 178-188.

Özdemir, H. ve Rezaki, M. (2007). General Health Questionnaire-12 for the detection of depression. *Türk Psikiyatri Dergisi, 18*(1), 13-21.

Özkan, B., Arguvanlı, S., Erten, Z. K. ve Ümit, S. E. (2013). 14 yaş ve üzeri bireylerin anksiyete ve genel sağlık düzeylerinin belirlenmesi. *ERÜ Sağlık Bilimleri Fakültesi Dergisi, 1*(1), 1-9.

Peterman, A. H., Fitchett, G., Brady, M. J., Hernandez, L., & Cella, D. (2002). Measuring spiritual well-being in people with cancer: The functional assessment of chronic illness therapy—Spiritual Well-being Scale (FACIT-Sp). *Annals of Behavioral Medicine*, *24*(1), 49-58. https://doi.org/10.1207/S15324796ABM2401_06

Preacher, K. J., & Hayes, A. F. (2008). *Assessing mediation in communication research*. London: The Sage sourcebook of advanced data analysis methods for communication research. https://doi.org/10.4135/9781452272054.n2

Rajan, S., McKee, M., Rangarajan, S., Bangdiwala, S., Rosengren, A., Gupta, R., Kutty, V. R., Wielgosz, A., Lear, S., AlHabib, K. F., Co, H. U., Lopez-Jaramillo, P., Avezum, A., Seron, P., Oguz, A., Kruger, I. M., Diaz, R., Nafiza, M. N., Chifamba, J., Yeates, K., Prospective Urban Rural Epidemiology (PURE) Study Investigators. (2020). Association of symptoms of depression with cardiovascular disease and mortality in low-, middle-, and high-ıncome countries. *JAMA Psychiatry, 77*(10), 1052–1063. https://doi.org/10.1001/jamapsychiatry.2020.1351

Rohde, G. E., Young, T., Winstanley, J., Arraras, J. I., Black, K., Boyle, F., Bredart, A., Costantini, A., Guo, J., Irarrazaval, M. E., Kobayashi, K., Kruizinga, R., Navarro, M., Omidvari, S., Serpentini, S., Spry, N., van Laarhoven, H., Yang, G., & Vivat, B. (2019). Associations between sex, age and spiritual well-being scores on the EORTC QLQ-SWB32 for patients receiving palliative care for cancer: A further analysis of data from an international validation study. *European Journal of Cancer Care, 28*(6). https://doi.org/10.1111/ecc.13145

Rias, Y. A., Rosyad, Y. S., Chipojola, R., Wiratama, B. S., Safitri, C. I., Weng, S. F., Yang, C. Y., & Tsai, H. T. (2020). Effects of spirituality, knowledge, attitudes, and practices toward anxiety regarding COVID-19 among the general population in Indonesia: A cross-sectional study. *Journal of Clinical Medicine, 9*(12), 3798. https://doi.org/10.3390/jcm9123798

Sillick, W. J., & Cathcart, S. (2014). The relationship between religious orientation and happiness: The mediating role of purpose in life. *Mental Health, Religion & Culture, 17*(5), 494-507. https://doi.org/10.1080/13674676.2013.852165

Spilka, B., Hood Jr, R. W., Hunsberger, B., & Gorsuch, R. (2003). *The Psychology of Religion*.

Sullins, D. P. (2006). Gender and religion: Deconstructing universality, constructing complexity. *American Journal of Sociology, 112*(3), 838-880. https://doi.org/10.1086/507852

Teixeira, C. F., & Pinto, I. C. D. M. (2023). Analysis of health surveillance models and strategies for the COVID-19 pandemic. *Ciência & Saúde Coletiva, 28*, 1274-1274. https://doi.org/10.1590/1413-81232023285.01412023en

Teo, Y. (2013). Support for deserving families: Inventing the anti-welfare familialist state in Singapore. *Social Politics, 20*(3), 387-406. https://doi.org/10.1093/sp/jxt004

Turan, Y., Dadfar, M., Abdel-Khalek, A. M., & Cikrikci, Ö. (2022). Love of life in Turkish students during the COVID-19 pandemic. *Mankind Quarterly, 62*(3), 534-554. https://doi.org/10.46469/mq.2022.62.3.8

Varcolis, E. M. (1998). *Foundations of psychiatric mental health nursing*. Philadelphia.

Walsh, Z., Gonzalez, R., Crosby, K., Thiessen, M. S., Carroll, C., & Bonn-Miller, M. O. (2017). Medical cannabis and mental health: A guided systematic review. *Clinical Psychology Review, 51*, 15-29. https://doi.org/10.1016/j.cpr.2016.10.002

World mental health report: Transforming mental health for all. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

Ziapour, A., Khatony, A., Jafari, F., & Kianipour, N. (2017). Prediction of the dimensions of the spiritual well-being of students at Kermanshah University of Medical Sciences, Iran: The roles of demographic variables. *Journal of Clinical and Diagnostic Research: JCDR, 11*(7). https://doi.org/10.7860/JCDR/2017/25114.10314

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Research Article

Social Support and Resilience among 2023 Türkiye Earthquake Survivors: Spirituality as a Mediator

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Abstract

Exposure to earthquakes can have negative effects on the resilience of survivors. However, various factors may have a buffering effect on the resilience levels of earthquake survivors. This study aims to examine the mediating role of spirituality in the relationship between social support and resilience among 2023 Türkiye earthquake survivors. A total of 473 earthquake survivors, 293 female (61.9%) and 180 male (38.1%) participated in the study. The age range of earthquake survivors participating in the study ranges from 18 to 34. Multidimensional Scale of Perceived Social Support (MSPSS), Brief Resilience Scale, and Spiritual Orientation Scale were used to collect data from earthquake survivors who directly experienced the earthquake. Results show significant positive relationships between social support, resilience, and spirituality. Also, the relationship between social support and resilience was mediated by spirituality. Research findings indicate that social support and spirituality can contribute to the recovery process of earthquake survivors after traumatic events. It is recommended that researchers and practitioners provide systematic social support for earthquake survivors. In addition, spiritual intervention methods can contribute to the resilience levels of earthquake survivors.

Keywords:
Social Support • Resilience • Spirituality • Earthquake

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Introduction

Earthquakes are major natural disasters that affect the lives of millions of people. On February 6, 2023, two devastating earthquakes affected a wide geography in Türkiye and caused significant changes in the lives of millions of people. Natural disasters such as earthquakes generally increase the psychological stress of earthquake survivors and naturally decrease their quality of life. In addition, depressive symptoms and post-traumatic stress disorder can be seen in many earthquake survivors after earthquakes (Tang et al., 2018; İme, 2023). Despite the devastating effects of earthquakes, some individuals are not as affected by this negative situation as others. One of the important factors that protect them against negative situations is resilience (Meng et al, 2018).

Resilience is defined as an individual's problem-solving ability, or ability to overcome adversities (Zautra et al., 2010). Studies show that resilience plays an important role in improving well-being and psychological growth in adverse situations (Bonanno et al., 2010). It is claimed that sometimes stress factors increase resilience (Crane et al., 2018). Resilience, which is a protective factor against mental health problems or adverse conditions, can contribute to the mental health of earthquake survivors (Fu et al., 2013). The ability to regulate emotions in challenging conditions is also positively associated with resilience (İme & Ümmet, 2022). Because individuals with high resilience levels have a higher capacity to adapt quickly to the negativities experienced despite the traumatic experiences (Rajkumar et al., 2008). Resilience can be seen as a protective shield that makes it easier for earthquake survivors to cope with the negative situations they have experienced. When the factors contributing to the resilience levels of earthquake survivors are examined, it is seen that spirituality and social support (İkizer et al., 2016) are positively related to resilience.

Survivors often use a wide variety of coping strategies when they experience trauma, crisis, or stressful events. Spirituality is an important factor in post-traumatic recovery (Vis & Boynton, 2008). Many survivors often turn to religion or spirituality when they face with distress or trauma. In general, spirituality is useful in coping with difficulties (Shaw et al., 2005). Similarly, studies confirm that many people who experience a traumatic event view their difficulties from their spiritual perspective (Chen & Koening, 2006). Research indicates that traumas have both positive and negative effects on individuals' spiritual experiences (Ano & Vasconcelles, 2005). For example, depressive symptoms and shock experienced in the first place may suggest that the individual is punished by God. However, as time passes, the individual can get rid of this situation. On the other hand, some individuals may feel closer to God after traumas. Similarly, they may experience an increase in the meaning and purpose of life and spiritual well-being (Milstein, 2019). All these studies support that spirituality can positively affect resilience, especially after disasters such as earthquakes.

Like spirituality, social support also accelerates the recovery process of survivors after disasters (Mesidor & Sly, 2019). Social support enables individuals to feel that family, friends, or society is available to them after disasters. Feeling and seeking social support after natural disasters is one of the strategies to cope with negativities (Xu & Ou, 2014). Earthquake survivors who perceive a high level of social support show low levels of depression and anxiety symptoms (Xu & Liao, 2011). Guo et al. (2018) study with earthquake survivors indicates that a high level of social support is associated with a low level of post-traumatic stress disorder as well as reduced suicidal thoughts. Therefore, it is evaluated that social support contributes positively to resilience.

Present Study

Social support helps earthquake survivors to cope with the negative effects of the earthquake and to get rid of its negative effects (Xi et al., 2020). Similarly, it is stated in the studies that spirituality is an important factor that positively affects the psychological resilience levels of earthquake survivors. Also, spirituality is an important factor in coping effectively with the negative situation experienced (Blanc et al., 2016). Therefore, it is evaluated that spirituality and social support contribute to earthquake survivors' coping with the effects of the devastating earthquake and their resilience levels.

Recent studies indicate that resilience is a personal trait that not only protects individuals from the negative effects of traumatic events but also improves their well-being and post-traumatic growth (Henson et al., 2021). It is considered research to determine the negative effects of earthquakes on survivors and to improve their resilience levels. For this reason, it is considered important to identify resilience-related factors to improve the skills of earthquake survivors to cope with traumatic events. Spirituality is considered a potential factor that facilitates earthquake survivors' adaptation to a new situation. Spirituality can reduce the negative impact of earthquakes on survivors' resilience and protect them from the negative effects of post-earthquake stress. Spirituality can be a psychological tool to overcome the difficulties faced by earthquake survivors. In addition, spirituality can increase resilience and contribute to earthquake survivors in adverse situations. When the literature is examined, it is seen that after the 2023 Türkiye earthquakes, a study that combines these variables has not yet been conducted with earthquake survivors. This increases the importance of the research. The current study aims to examine the mediating role of spirituality in the relationship between social support and resilience of earthquake survivors affected by the 2023 Türkiye earthquakes. In line with this main purpose, the hypotheses of the research were determined as follows:

H1. There is a positive relationship between social support and resilience.

H2. There is a positive relationship between social support and spirituality.

H3. There is a positive relationship between spirituality and resilience.

H4. Spirituality mediates the relationship between social support and resilience.

Method

Participants

The present study was carried out approximately 3 months after the earthquakes in Türkiye on February 6, 2023. The criterion for inclusion in the study was determined as being directly affected by the February 6, 2023 earthquakes in Türkiye. All participants in the study participated voluntarily. All participants in the research consist of earthquake survivors who live in cities affected by the earthquake in Türkiye on February 6, 2023. Informed consent was obtained from all participants. Data were collected through online channels. A total of 473 earthquake survivors over the age of 18 participated in the study. The ages of the participants ranged from 18 to 34 (M_{age}= 24.28, *SD*= 4.49).

Measures

Multidimensional scale of perceived social support (MSPSS). Zimet et al. (1988) developed the scale. Eker et al. (2000) adapted the scale into Turkish. The scale, which has a 7-point Likert structure consists of 12 items. Perceived social support according to the scale is determined by the support received from family, friends, and important people. In line with the hypotheses created in the current study, the general perceived social support score average was taken as a basis. The psychometric properties of the scale indicate that it is a valid and reliable measurement tool. In the current study, the reliability coefficient of the scale was found to be sufficient (α= .84).

Brief resilience scale. Smith et al. (2008) developed a scale to measure the resilience levels of individuals. The scale was adapted into Turkish by Doğan (2015). The scale, which consists of 6 items has a 5-point Likert structure. The psychometric properties of the scale showed that it is a valid and reliable instrument. In the current study, the reliability coefficient of the scale was found to be sufficient (α= .82).

Spiritual orientation scale. Kasapoğlu (2015) developed it to determine the spiritual orientation. The scale consists of 16 items. The scale has a single-factor structure and a 7-point Likert structure. The psychometric properties of the scale showed that it is a valid and reliable instrument. In the current study, the reliability coefficient of the scale was found to be sufficient (α= .80).

Data Analysis

Before starting the analysis of the data, a preliminary assumptions test was carried out. In line with the recommendations of Tabachnick & Fidell (2013), the normality values of the data sets were tested by calculating skewness and kurtosis values. The relationships between the study variables were first calculated by the correlation values. Subsequently, the mediation model was tested using Process Macro (Model 4, Hayes 2017). Gender and age variables were included in the analysis as covariates. Process macro is a program for calculating direct and indirect effects as well as path analysis between variables and mediation effects (Hayes, 2017). The relations between the variables were made by calculating the beta coefficients (β). Also, whether the indirect effects were significant or not was calculated using 5000 bootstrap samples (95% CI). Analyzes were performed in SPSS version 28.

Results

Correlations

The correlation between the variables, descriptive statistics, and reliability coefficients are given in Table 1. Resilience is positively correlated with social support (r= .40, p<.001) and spirituality (r= .33, p<.001). In addition, there is a positive correlation between spirituality and social support (r = .48, p<.001).

Table 1
Descriptive statistics and correlations between variables (N=473)

Variables	1	2	3	α	*M*	*SD*	Skewness	Kurtosis
1. Social Support	-			.84	4.23	1.49	.188	-.950
2. Spirituality	.48**	-		.80	4.15	1.76	.262	-1.227
3. Resilience	.40**	.33**	-	.82	3.15	1.08	-.124	.150

**p<.001

Statistical Assumption Tests

The results show that the skewness varies between -.124 and .262 and kurtosis between -1.227 and .150. All reliability coefficients were found to be quite above .70. The variable inflation values were detected as 1.13-1.29, tolerance values as .72, .78, and Durbin Watson value as 1,98. Findings indicate that there is no multicollinearity and residual problem (See Table 1). Therefore, all assumptions have been met as Field (2013) suggests.

Mediational Analysis

The findings of the mediation analysis are given in Figure 1. Findings affirm hypothesis 1 and the fact that social support has a positive effect on resilience ($\beta = -.296$, $p < .001$). This coefficient decreased when the mediating variable

(spirituality) was included in the model, but it was still found to be statistically meaningful (direct effect, $\beta=-.234$, $p<.05$). Spirituality is a positive predictor of social support ($\beta=.565$, $p<.001$, H2) and resilience is a positive predictor of spirituality ($\beta=.109$, $p<.001$, H3).

Figure 1.
*Results of the mediation model, **p<.001. The values shown are non-standardized coefficients.*

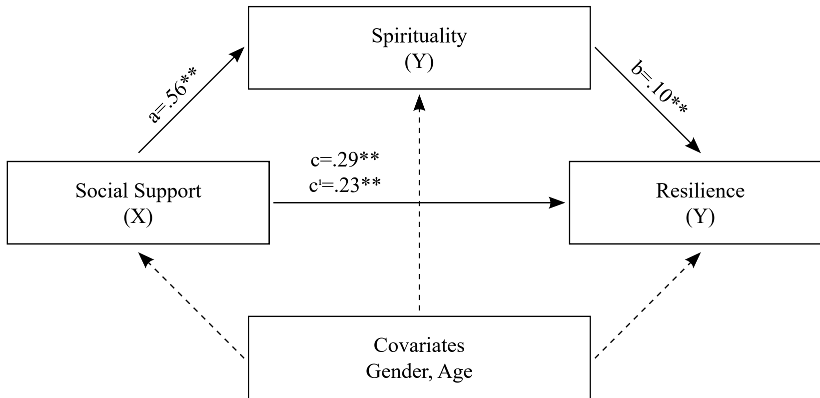

Table 2 shows the effect of social support on resilience through spirituality. Research findings also affirm hypothesis 4. Findings have found a significant indirect effect of social support on resilience through spirituality ($\beta=.061$, $SE=.018$, 95% $CI=[.025, .099]$). It may be indicated that there is an indirect relationship between social support and resilience. Thus, spirituality partially mediates this relationship.

Table 2
Indirect Effect of Social Support on Resilience via Spirituality

Path			Coefficient	95% CI	
				LL	UL
Social Support	Spirituality	Resilience	.061	.025	.099
Total Effect			.296	.236	.356
Direct effect			.234	.167	.301
Total indirect effect			.061	.025	.099

CI confidence interval, *LL* lover limit, *UL* upper limit

Discussion

In this study, the mediating role of spirituality in the relationship between social support and resilience of Türkiye earthquake survivors of February 6, 2023, was examined. Findings determined that social support is a positive predictor of resilience of earthquake survivors. In addition, the findings also showed that spirituality has a mediating effect on the relationship between social support and resilience.

The present results confirm previous studies showing the contribution of social support to individuals' resilience levels after natural disasters. For example, Xi et al. (2020) found that high social support was associated with high resilience among earthquake survivors. Also, social support and resilience can protect earthquake survivors from anxiety, stress, and depression that earthquakes may cause. Again, Wang et al. (2022) determined that the social support perceived by earthquake survivors from their environment can reduce their negative feelings and is positively related to their resilience levels. In general, individuals who can reach adequate social support after disasters can maintain good relations with their environment, which contributes to their reaching a higher level of resilience (Kang et al., 2018). So, the perceived social support of earthquake survivors may help them cope with stressful situations, which may contribute to their resilience. The findings show the importance of the social support provided to the earthquake survivors by both non-governmental organizations and the state after the earthquake.

The findings of the study showed that there is a positive relationship between social support and spirituality. Thus, the second hypothesis of the study was also confirmed. Feder et al. (2013) found that high perceived social support was associated with positive emotions in their study about Pakistan earthquake survivors. Also, Mesidor & Sly (2010) found a positive relationship between perceived social support and religion and spirituality by 2010 Haiti earthquake survivors. Perceived social support and post-traumatic growth are positively associated with spirituality (Garcia et al., 2014). Social support can allow earthquake survivors to connect with others. In addition, social support can shield them from developing negative emotions and contribute positively to their spiritual orientation.

Findings that show a positive relationship between spirituality and resilience also confirm the third hypothesis of the study. Studies in the literature support this finding. Spirituality has a healing effect against stress and negative emotions caused by earthquakes (Stratta et al., 2013). Experiencing a sense of sacredness and orientation to spirituality after tragedy and loss such as earthquakes and wars have a positive effect on individuals' coping skills (Captari et al., 2019). Also, Park & Blake (2020) state that spirituality and religiosity accelerate the recovery process of individuals after natural disasters. As a result, it can be stated that spirituality helps earthquake survivors cope with negative situations and contributes to their resilience.

The last hypothesis of the present study was also confirmed. The findings show that spirituality has a mediating effect on the relationship between social support and resilience. The present finding indicates that high levels of social support in earthquake survivors can positively affect resilience both directly and through spirituality. The present finding supports previous studies in the literature. Aten et al. (2019) conducted a

meta-analysis study on spirituality and coping skills of religion after natural disasters. Research findings show that spirituality and religion have positive effects on disaster survivors. Similarly, spirituality contributes to the resilience of earthquake survivors. In addition, spirituality may reduce earthquake survivors' possibility of depression and post-traumatic stress disorder (Blanc et al., 2016). Again, the study conducted with the 2011 Van earthquake survivors (Doğulu et al., 2016) shows that spirituality contributes positively to the earthquake survivors' adaptation to their new lives and can increase their resilience. As a result, spirituality can make it easier for earthquake survivors to cope with the negativities experienced. In addition, it can contribute to accepting the process and gaining a positive perspective. These factors can also positively affect resilience levels. Thus, spirituality can allow individuals to develop positive emotions, and be satisfied with their lives.

When the relevant literature is examined, it is seen that the current study is a pioneering study that deals with the social support and spirituality associated with resilience of 2023 Türkiye earthquake survivors. The current research points out the importance of social support for earthquake survivors to cope with negative emotions, to cope effectively with the trauma experienced, and to hold on to life again after devastating earthquakes. Social support can make earthquake survivors feel that they are not alone and can also provide emotional support and encouragement. For this reason, it is considered that meeting the nutritional, sheltering, psychological, and medical needs of earthquake survivors after the earthquake and in the ongoing process will facilitate their recovery. Again, the present study reveals the important role of spirituality in coping with the devastating effects of the earthquake. Spirituality can lead individuals to question life and search for meaning. Spiritual-oriented programs for earthquake survivors who have lost their relatives can be beneficial for them in the process of loss and mourning. It can also offer emotional support.

Limitations and suggestions

The present study indicates that social support and spirituality can be protective factors for earthquake survivors. In addition, the data in the current study were collected through questionnaires. Social desirability and prejudice may be impossible to eradicate. Again, since the study is a survey design, it eliminates the possibility of establishing causality between the variables. Finally, although variables that may be related to resilience of earthquake survivors were discussed; there may be other protective and risk factors that may be associated with resilience. Thus, it would be appropriate to conduct qualitative studies in grounded and phenomenology designs. Despite these limitations, the study shows that social support and spirituality are positive predictors of resilience. It is recommended that social support provided by close relatives, and non-governmental and state organizations should continue

to increase the resilience levels of earthquake survivors. Similarly, it is considered that practices that improve the spirituality of earthquake survivors will contribute positively to their resilience levels.

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Ethical approval. Ethical approval of the current study was obtained from Necmettin Erbakan University Social and Human Sciences Ethics Committee (Board Number: 2023/461).

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References

Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, *61*(4), 461-480. https://doi.org/ 10.1002/jclp.20049

Aten, J. D., Smith, W. R., Davis, E. B., Van Tongeren, D. R., Hook, J. N., Davis, D. E., ... & Hill, P. C. (2019). The psychological study of religion and spirituality in a disaster context: A systematic review. *Psychological Trauma: Theory, Research, Practice, and Policy*, *11*(6), 597. https://doi.org/10.1037/tra0000431

Blanc, J., Rahill, G. J., Laconi, S., & Mouchenik, Y. (2016). Religious beliefs, PTSD, depression, and resilience in survivors of the 2010 Haiti earthquake. *Journal of Affective Disorders*, *190*, 697-703. https://doi.org/10.1016/j.jad.2015.10.046

Bonanno, G. A., Brewin, C. R., Kaniasty, K., & Greca, A. M. L. (2010). Weighing the costs of disaster: Consequences, risks, and resilience in individuals, families, and communities. *Psychological Science in the Public Interest*, 11, 1–49. http://dx.doi.org/10.1177/1529100610387086

Captari, L. E., Hook, J. N., Aten, J. D., Davis, E. B., & Tisdale, T. C. (2019). Embodied spirituality following disaster: Exploring intersections of religious and place attachment in resilience and meaning-making. In V. Counted & F. Watts (Eds.), *The psychology of religion and place: Emerging perspectives* (pp. 49–79). Springer International Publishing. https://doi.org/10.1007/978-3-030-28848-8_4

Chen, Y. Y., & Koenig, H. G. (2006). Traumatic stress and religion: Is there a relationship? A review of empirical findings. *Journal of Religion and Health*, *45*, 371-381. https://doi.org/10.1007/s10943-006-9040-y

Crane, M. F., Searle, B. J., Kangas, M., & Nwiran, Y. (2019). How resilience is strengthened by exposure to stressors: The systematic self-reflection model of resilience strengthening. *Anxiety, Stress, and Coping*, *32*(1), 1-17. https://doi.org/10.1080/ 10615806.2018.1506640

Doğan, T. (2015). Kısa Psikolojik Sağlamlık Ölçeği'nin Türkçe uyarlaması: Geçerlik ve güvenirlik çalışması [Adaptation of the brief resilience scale into Turkish: A validity and reliability study]. *The Journal of Happiness & Well-Being*, *3*(1), 93-102.

Doğulu, C., Karanci, A. N., & Ikizer, G. (2016). How do survivors perceive community resilience? The case of the 2011 earthquakes in Van, Turkey. *International Journal of Disaster Risk Reduction*, 16, 108-114. https://doi.org/10.1016/j.ijdrr.2016.02.006

Eker, D., Arkar, H., & Yaldız, H. (2000). Generality of support sources and psychometric properties of a scale of perceived social support in Turkey. *Social Psychiatry & Psychiatric Epidemiology, 35*(5), 228–233. https://doi.org/10.1007/s001270050232

Feder, A., Ahmad, S., Lee, E. J., Morgan, J. E., Singh, R., Smith, B. W., ... & Charney, D. S. (2013). Coping and PTSD symptoms in Pakistani earthquake survivors: Purpose in life, religious coping, and social support. *Journal of Affective Disorders*, *147*(1-3), 156-163. https://doi.org/10.1016/j.jad.2012.10.027

Fu, C., Leoutsakos, J. M., & Underwood, C. (2013). Moderating effects of a post-disaster intervention on risk and resilience factors associated with posttraumatic stress disorder in Chinese children. *Journal of Traumatic Stress*, *26*(6), 663-670. https://doi.org/10.1002/jts.21871

García, F. E., Páez-Rovira, D., Cartes Zurtia, G., Neira Martel, H., & Reyes Reyes, A. (2014). Religious coping, social support, and subjective severity as predictors of posttraumatic growth in people affected by the earthquake in Chile on 27/2/2010. *Religions*, *5*(4), 1132-1145. https://doi.org/10.3390/rel5041132

Guo, J., Liu, C., Kong, D., Solomon, P., & Fu, M. (2018). The relationship between PTSD and suicidality among Wenchuan earthquake survivors: The role of PTG and social support. *Journal of Affective Disorders*, *235*, 90-95. https://doi.org/10.1016/ j.jad.2018.04.030

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Henson, C., Truchot, D., & Canevello, A. (2021). What promotes post traumatic growth? A systematic review. *European Journal of Trauma & Dissociation*, *5*(4), 100195. https://doi.org/10.1016/j.ejtd.2020.100195

Ikizer, G., Karanci, A. N., & Doğulu, C. (2016). Exploring factors associated with psychological resilience among earthquake survivors from Turkey. *Journal of Loss and Trauma*, *21*(5), 384-398. https://doi.org/10.1080/15325024.2015.1108794

İme, Y., & Ümmet, D. (2022). Adaptation of emotional flexibility scale: Its association with subjective well-being and resilience during COVID-19 Pandemic. *Child Indicators Research*, *15*(6), 2141-2154. https://doi.org/10.1007/s12187-022-09959-9

İme, Y. (2023). The Effect of Online Cognitive Behavioral Group Counseling on Anxiety, Depression, Stress and Resilience in Maraş-Centered Earthquake Survivors. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 1-16. https://doi.org/10.1007/s10942-023-00526-x

Kang, X., Fang, Y., Li, S., Liu, Y., Zhao, D., Feng, X., Wang, Y., & Li, P. (2018). The benefits of indirect exposure to trauma: The relationships among vicarious posttraumatic growth, social support, and resilience in ambulance personnel in China. *Psychiatry Investigation*, *15*(5), 452– 459. https://doi.org/ 10.30773/pi.2017.11.08.1

Kasapoğlu, F. (2015). Development of spiritual orientation scale: The study of validity and reliability. *İnönü Üniversitesi Eğitim Fakültesi Dergisi, 16*(3), 51-68. DOI: 10.17679/iuefd.16360640

Meng, Z., Wu, X., & Han, L. (2018). Post-traumatic stress disorder and post-traumatic growth among the adult survivors of the Lushan earthquake: Selecting resilience as the moderator. *International Journal of Disaster Risk Reduction*, *27*, 524-529. https://doi.org/10.1016/j.ijdrr.2017.11.016

Mesidor, J. K., & Sly, K. F. (2019). Religious coping, general coping strategies, perceived social support, PTSD symptoms, resilience, and posttraumatic growth among survivors of the 2010 earthquake in Haiti. *Mental Health, Religion & Culture*, *22*(2), 130-143. https://doi.org/10.1080/13674676.2019.1580254

Milstein, G. (2019). Disasters, psychological traumas, and religions: Resiliencies examined. *Psychological Trauma: Theory, Research, Practice, and Policy*, *11*(6), 559. https://doi.org/10.1037/tra0000510

Park, C.L., & Blake, E.B. (2020). Resilience and recovery following disasters: the meaning making model. In S.E. Schulenberg (Ed.), *Positive psychological approaches to disaster: Meaning resilience, and posttraumatic growth (*pp.9-25*).* Springer.

Rajkumar, A. P., Premkumar, T. S., & Tharyan, P. (2008). Coping with the Asian tsunami: Perspectives from Tamil Nadu, India on the determinants of resilience in the face of adversity. *Social Science & Medicine*, *67*(5), 844-853. https://doi.org/10.1016/j. socscimed.2008.05.014

Shaw, A., Joseph, S., & Linley, P. A. (2005). Religion, spirituality, and posttraumatic growth: A systematic review. *Mental Health, Religion & Culture*, *8*(1), 1-11. https://doi.org/10.1080/1367467032000157981

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*(3), 194–200. https://doi.org/10.1080/10705500802222972

Stratta, P., Capanna, C., Riccardi, I., Perugi, G., Toni, C., Dell'Osso, L., & Rossi, A. (2013). Spirituality and Religiosity in the Aftermath of a Natural Catastrophe in Italy. *Journal of Religion and Health*, *52*, 1029-1037. https://doi.org/10.1007/s10943-012-9591-z

Tabachnick B. G. & Fidel, L. S. (2013). *Using multivariate statistics* (7th ed.). Pearson.

Tang, W., Zhao, J., Lu, Y., Zha, Y., Liu, H., Sun, Y., ... & Xu, J. (2018). Suicidality, posttraumatic stress, and depressive reactions after earthquake and maltreatment: a cross-sectional survey of a random sample of 6132 Chinese children and adolescents. *Journal of Affective Disorders*, 232, 363-369. https://doi.org/10.1016/j.jad.2018.02.081

Xi, Y., Yu, H., Yao, Y., Peng, K., Wang, Y., & Chen, R. (2020). Post-traumatic stress disorder and the role of resilience, social support, anxiety and depression after the Jiuzhaigou earthquake: A structural equation model. *Asian Journal of Psychiatry*, 49, 101958. https://doi.org/10.1016/j.ajp.2020.101958

Xu, J., & Liao, Q. (2011). Prevalence and predictors of posttraumatic growth among adult survivors one year following 2008 Sichuan earthquake. *Journal of Affective Disorders*, *133*(1-2), 274-280. https://doi.org/10.1016/j.jad.2011.03.034

Xu, J., & Ou, L. (2014). Resilience and quality of life among Wenchuan earthquake survivors: the mediating role of social support. *Public Health*, *128*(5), 430-437. https://doi.org/10.1016/j.puhe.2014.03.002

Vis, J. A., & Marie Boynton, H. (2008). Spirituality and transcendent meaning making: Possibilities for enhancing posttraumatic growth. *Journal of Religion & Spirituality in Social Work: Social Thought*, *27*(1-2), 69-86. https://doi.org/10.1080/ 15426430802113814

Wang, D., Chen, X. Y., Zhai, S., & Fan, F. (2022). Gratitude and internalizing/externalizing symptoms among adolescents after the Wenchuan earthquake: Mediating roles of social support and resilience. *Journal of Adolescence*, *94*(6), 867-879. https://doi.org/ 10.1002/jad.12070

Zautra, A., Hall, J. S., & Murray, K. (2010). Resilience: A new definition of health for people and communities. In J. W. Reich, A. J. Zautra, & J. S. Hall (Eds.), *Handbook of adult resilience* (pp. 3–34). Guildford Press.

Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G.K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52, 30–41. https://doi.org/10.1207/s15327752jpa5201_2

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Research Article

Death Anxiety, Life Satisfaction and Psychological Well-Being in Middle Adults

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Abstract

In this study, the relationship between death anxiety, life satisfaction, and psychological well-being levels of individuals in middle adulthoodwas examined. The study group of the study consists of 340 volunteer individuals between the ages of 40-59, selected through the convenience sampling method. The data of the research were collected using the Death Anxiety Scale (DAS), Life Satisfaction Scale (LSS), and the Psychological Well-being Scale (PWS). The data collectedin thestudywere analyzed using the SPSS-21 packageprogram. Independent Groups T-Test, One-Way ANOVA, Pearson Product-Moment Correlation, and Multiple Linear Regression analyses were used for data analysis. According to the results obtained; While death anxiety does not show a significant difference with respect to age, it varies significantly according togender and education level. Life satisfaction, on the other hand, does not show a significant difference with respect to age, gender, or education level. However, psychological well-being shows a significant difference with respect to age but does not differsignificantly according to gender or education level. The analysis conducted using Pearson's Correlation Coefficient revealed a weak level ofrelationship between death anxiety and psychological well-being, while a stronglevel of relationship was found between life satisfaction and psychological well-being. Multiple Linear Regression analysis indicated that death anxiety and life satisfaction significantly predict psychological well-being.

Keywords:

Death Anxiety • Life Satisfaction • Psychological Well-Being • Middle Adulthood • Adult

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Introduction

While human beings strive to sustain their existence in life, they are also forced to confront the reality of death. The thought of death can be a source of anxiety for individuals, but at the same time, it can be a factor that connects people to life and help them find meaning in their existence (Karakuş, 2012). According to Yalom (1980), life and death are simultaneously connected simultaneously; while death makes its constant presence felt beneath the thin line of life, it has a great impact on people's experiences and behaviors.

The meaning of death andthoughts about deathhave been one of the focal points throughout history. When death is perceived as a punishment, loss, a consequence of failure, or a painful separation situation, it tends to result in high levels of death anxiety. Similarly, fears that the moment of death will bepainful or concerns about the disintegration of the body after death can contribute to this anxiety (Assari & Lankarani, 2016).

The perception of the concept of death may differdepending on the developmental stage one is in. A child who has not yet developed abstract thinking skills may have difficulty understanding the concept of death and may not fully grasp what death is like. How adults perceive the concept of death is influenced by social and cultural traditions, beliefs, personal and emotional issues, religious doctrines, and conceptual understandings, all of which are intertwined (Sezer & Saya, 2009). Hökelekli (1991) noted that "fear of death" could underlie most anxieties observed in adulthood and old age. The idea of ceasing to exist, the uncertainty of what will happen after death, and the fear of being separated from loved ones can affect the psychological well-being of older adults and may lead to disorders such as depression (Özen, 2008). In other words, death anxiety not only has negative effects on individuals' daily lives but also reveals situations that hinder their psychological well-being (Kurt Magrebi & Akçay, 2020).

Yalom has emphasized that confronting the concept of death has positive effects on individuals and contributes to personal development (Bakırtaş, 2018). It is believed that It is believed that the better the mental and physical health of individuals, the lower the anxiety about death. This is because they can be more resilient against problems and can perceive control over their lives (Lockhart et al., 2001). Awareness begins as individuals live in the moment and accept the reality of death, leading to a healthier life (Yalom, 2001). The key point here is that individuals contemplate what the meaning of life is, strive to find satisfaction in life, and seek ways to achieve it. This way, individuals can eliminate anxiety and nourishtheir psychological well-being (Tanhan, 2007). Individuals with high psychological well-being also experience positive emotions on an emotional level and have greater satisfaction in their lives on a cognitive level (Demir et al., 2021).

Life satisfaction is the concept through which the contentment with life is assessed. Life satisfaction signifies the quality of life and the satisfaction one derives from the

life lived. As humans are in a continuous process of development, maintaining mental and physical health accompanies life satisfaction (Veenhoven, 1996). To preserve one's well-being, it is crucial to derive satisfaction from life and sustain it. Otherwise, experiencing low levels of life satisfaction can pave the way for depressive symptoms (Koivumaa-Honkanen et al., 2004). Closely related to psychological well-being, life satisfaction plays a key role in an individual's ability to live a happy life. Various pathways to happiness, such as the pursuit of pleasure, engagement, and meaning, are reported to be associated with life satisfaction (Peterson et al., 2005).

Psychological well-being can be defined as the ability to cope with existential conditions that encompass self-acceptance, positive relations with others, autonomy, environmental mastery, individual development, andpurpose in life, all of which indicate an individual's functionality in life (Ryff & Keyes, 1995). It reflects what is happening in an individual's psychological, emotional, and social world. Striving to establish positive relationships with others or continuing one's life for a specific purpose can serve as examples of steps toward psychological well-being (Keyes et al., 2002). In this context, psychological well-being is related to an individual finding meaning in life through specific purposes (Küçük, 2020). With their relationship with their surroundings and the meaning they attribute to life, individuals who experience psychological well-being start to get to know themselves, discover their strengths and weaknesses, feel independent, and have a positive self-perception (Ryff and Keyes, 1995); they focus on positive emotions, thoughts, and experiences in their lives (Myers & Diener, 1995).

When the literature is examined, it can be observed that there are studies indicating a significant negative relationship between death anxiety and life satisfaction (Arslan, 2019; Ekşi et al., 2021; Given & Range, 1990; Hululular, 2019; Roshani, 2012; Taghiabadi et al., 2017; Tate, 1983; Xie & Liu, 2022). On the other hand, there are also studies that show no significant relationship between them (Sağırer, 2021; Toplanır, 2018). In studies examining the relationship between death anxiety and psychological well-being, death anxiety is primarily associated with one of the types of psychological well-being, namely, spiritual well-being (Dadfar et al., 2016; Feng et al., 2021; Mansori et al., 2018; Shirkavand et al., 2018).

In the existing literature, two studies have been identified that simultaneously examined death anxiety, life satisfaction, and psychological well-being, and these studies produced some differences in their results (Özer et al., 2021; Shirkavand et al., 2018). However, in Shirkavand et al.'s (2018) study, well-being was examined as spiritual well-being rather than direct psychological well-being.In summary, while the prevailing literature tends to suggest a significant relationship between death anxiety and life satisfaction, there have been studies that did not support this

relationship, and findings regarding the relationship between these two variables have been inconsistent. When examining the concept of psychological well-being in conjunction with death anxiety, it has primarily been approached through the lens of spiritual well-being. Additionally, the sample groups studied in these researches have often consisted of elderly individuals.

This study aims to contribute to the literature by examining the relationship between death anxiety, life satisfaction, and psychological well-being in middle adulthood individuals. Additionally, it is aimed to determine whether these three variables differ according to gender, age and educational status. It is believed that individuals in middle adulthood can live a healthier and more peaceful life in their current period; and also in order to transition to old age with a more positive attitude, death anxiety, life satisfaction and psychological well-being may play a role in this process and it is. The general problem of the research can be expressed as "Are there significant relationships between death anxiety, life satisfaction, and psychological well-being in middle adulthood individuals?". In order to address this general problem, the following questions are aimed to be answered:

i. Do death anxiety, life satisfaction, and psychological well-being levels differ according to gender, age, and education level?

ii. Are there significant relationships between death anxiety, life satisfaction, and psychological well-being levels?

iii. Do levels of death anxiety and life satisfaction significantly predict psychological well-being?

Method

Research Design

In this study, a relational survey model was employed to examine the relationships between death anxiety, life satisfaction, and psychological well-being levelsof individuals in middle adulthood.

Study Group

The study group of this research consists of 340 voluntary individuals residing in Istanbul in the year 2022, ranging in ages from 40 to 59, with various levels of education (elementary school, middle school, high school, associate degree, undergraduate, postgraduate), 168 of whom are female and 166 are male. When determining the age range of the study group, developmental psychology theories were taken into consideration. According to Levinson (1986), one of the leading

theorists of the adulthood period (1986), middle adulthood covers individuals aged approximately between 40 and 65. Based on this, it is assumed that the transition to middle adulthood begins in the early 40s, and as individuals approach their 60s, they move towards late adulthood. Therefore, it is thought that the characteristics of participants in the age groups of 40-49 and 50-59 may differ. In line with this, two different groupings were made in terms of the age variable.In order to examine the differentiation of death anxiety, life satisfaction, and psychological well-being according to gender, in line with the research objective, care was taken to select a similar number of female and male participants in the participant group. To include individuals from different educational levels in the sample, individuals from every educational level were included in the study. Non-probability convenience sampling method was used to collect the data. In this method, researchers work with voluntary individuals they can reach in their immediate environment (Erkuş, 2005). Descriptive information about the study group is provided in Table 1.

Table 1

Frequency Distributions for Participant Gender, Age, and Education Level

	Variables	F	%
Gender	Female	168	50,3
	Male	166	49,7
Age	40-49	190	56,9
	50-59	144	43,1
Education	Primary and Middle S.	81	24,3
	High School and Associate Degree	91	27,2
	Undergraduate and Postgraduate	162	48,5

As indicated in Table 1, there are 168 female participants (50.3%) and 166 male participants (49.7%). Among the participants, 190 individuals (56.9%) fall within the age range of 40-49, while 144 individuals (43.1%) are in the 50-59 age range. Regarding the education level, there are 81 participants (24.3%) with elementary to middle school education, 91 participants (27.2%) with high school to associate degree education, and 162 participants (48.5%) with undergraduate to postgraduate education.

Data Collection Instruments

Demographic information form. A short demographic information form was prepared by the researchers to determine the demographic details of the individuals participating in the study, including gender, age, and education level.

Death anxiety scale (DAS). The Death Anxiety Scale is a 5-point Likert-type scale consisting of 20 items developed by Sarıkaya (2013) to measure individuals' levels of death anxiety. The scale has a minimum score of 20 and a maximum score of 100. The scale consists of three subscales: uncertainty about death, thinking and witnessing death, and suffering. There are no reverse items in the scale. The scale's

item-total correlation, exploratory and confirmatory factor analysis, significance of the 27% upper-lower group difference, criterion validity, internal consistency, and test-retest reliability were examined. As a result of the reliability analysis of the scale, Cronbach's Alpha and test-retest methods were utilized, resulting in values of 0.95 and 0.82, respectively. All of these findings indicate that the scale is a valid and reliable instrument.

Life satisfaction scale (LSS). The Life Satisfaction Scale is a unidimensional scale consisting of 5 items developed by Dağlı and Baysal (2016) to measure individuals' perceptions of life satisfaction. The scale is a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The minimum score that can be obtained from the scale is 5, while the maximum score is 25. The scale's content validity and construct validity were examined, and exploratory and confirmatory factor analyses were used for construct validity. After the reliability analysis, the Cronbach's Alpha coefficient was found to be 0.88, and the test-retest value was 0.97.

Psychological well-being scale (PWS). The Psychological Well-Being Scale is a scale developed by Diener et al. (2009) and adapted to Turkish culture by Telef (2013) to assess individuals' psychological well-being. The scale is used to evaluate individuals' psychological well-being. The items on the scale are answered on a scale of 1 (strongly disagree) to 7 (strongly agree). Scores on the scale can range from a minimum of 8 to a maximum of 56, indicating that individuals with higher scores have many psychological resources. Exploratory and confirmatory factor analyses were used for the construct validity of the scale, and similar scales were used for criterion validity. As a result of the reliability analysis, the Cronbach's Alpha coefficient was found to be 0.80.

Data Collection

Permission was obtained from Marmara University Institute of Educational Sciences Research and Publication Ethics Committee to conduct the study. The study was deemed ethically appropriate (Approval Date and Approval Number: 31.08.2022/06-31). Before collecting data, all individuals in the study group were informed about the purpose of the study, and their consent was obtained for participation. Data were collected through scale forms delivered in person to the participants and via scales prepared on an online platform. The reason for collecting data in this way is to provide efficiency in terms of time and cost to the researchers. This allows reaching a large number of people in a short period. After data collection, 6 individuals with outlier data were removed from the dataset, and the analysis was conducted using the data of 334 individuals.

Data Analysis

The data collected in the study were analyzed using the SPSS-21 software package. In the analysis of the data, descriptive statistics such as frequency, arithmeticmean, and standard deviation were used. Independent Samples t-test, One-Way ANOVA (with Levene's test and Tukey tests), Pearson Product-Moment Correlation, and Multiple Linear Regression analyses were used to understand the relationships between death anxiety, life satisfaction, and psychological well-being and whether these variables differ according to gender, age, and education level.

Multiple regression is used when there is one dependent variable and two or more independent variables (Tutar & Erdem, 2022). Therefore, the multiple regression analysis was used to examine the level at which death anxiety and life satisfaction predict psychological well-being, given that there were two independent variables (death anxiety and life satisfaction) and one dependent variable (psychological well-being). Prior to commencing the dataanalysis process, checks were performed for outliers, incorrectly entered data, and missing data, as recommended by Pallant (2016). There were no erroneous or missing datain the dataset.

Results

The reliability of the scales used in the study was assessed using Cronbach's Alpha coefficient, and the results are presented in Table 2.

Table 2

Reliability analysis for death anxiety, life satisfaction, and psychological well-being scales

Variable	Cronbach Alfa (a)	The number of items	X	sd
Death Anxiety	,96	20	50,73	22,14
Life Satisfaction	,85	5	16,32	4,76
Psyhological Well-Being	,83	8	43,93	7,67

Özdamar (2002) has stated that the Cronbach's Alpha value, between 0.81 and 1.00, indicates high reliability, and when Table 2 is examined, it can be seen that the Cronbach's Alpha value for each scale is greater than 0.81, indicating high reliability of the measuring instruments. Based on this information, it was tested whether the data showed a normal distribution or not.

For social sciences, another way to determine whether the data is normally distrubuted is to look at the skewness and kurtosis values. Skewness and kurtosis values falling between -1.5 and +1.5 indicate that the data follows a normal distribution (Tabachnick & Fidell, 2013). The skewness and kurtosis coefficients of the scales are shown in Table 3.

Table 3
Skewness and kurtosis values for death anxiety, life satisfaction, and psychological well-being scales

	Skewness Coefficient	Kurtosis Coefficient
Death Anxiety	,47	-,82
Life Satisfaction	-,30	-,53
Psyhological well-being	-,57	-,36

The skewness coefficient for the Death Anxiety Scale data is -0.47, while the kurtosis coefficient is -0.82. For Life Satisfaction data, the skewness coefficient is -0.30, and the kurtosis coefficient is -0.53. Finally, for Psychological Well-being data, these values are -0.57 and -0.36, respectively. As seen in Table 3, since these values fall within the range of -1.5 to +1.5, it can be said that the data follows a normal distribution.

Independent Samples T-Test for Gender and Age Variables

An Independent Samples T-Test was conducted to examine whether the levels of death anxiety, life satisfaction, and psychological well-being differ according to age and gender. The results of the analysis are presented in Table 4.

Table 4
Analysis of death anxiety, life satisfaction, and psychological well-being scores by gender

		Group	N	X	sd	df	t	P
Death Anxiety	Gender	Female	168	57,11	23,09	332	5,53	,00
		Male	166	44,26	19,14			
	Age	40-49	190	51,87	22,39	332	1,09	,28
		50-59	144	49,21	21,79			
Life Satisfaction	Gender	Female	168	16,39	4,75	332	,26	,80
		Male	166	16,25	4,79			
	Age	40-49	190	15,99	4,86	332	-1,44	,15
		50-59	144	16,75	4,61			
Psyhological Well-Being	Gender	Female	168	44,05	7,77	332	,32	,75
		Male	166	43,79	7,56			
	Age	40-49	190	43,17	7,51	332	-2,06	,04
		50-59	144	44,91	7,75			

According to the findings obtained, the level of death anxiety does not show a significant difference based on age (t= 1.09; p>.05), but it does show a significant difference based on gender (t=5.53; p<.05). The average death anxiety score for females is 57.11, while the average death anxiety score for males is 44.26. The difference in averages is statistically significant, indicating that female participants have higher levels of death anxiety than male participants.There were no significant differences in individuals' perceptions of life satisfaction based on age (t=-0.44; p>.05) or gender (t=0.26; p>.05).While there was no significant difference in psychological well-being based on gender (t=0.32; p>.05), a significant difference was observed based on age (t=-2.06; p<.05). Specifically, individuals in the 50-59 age range have

higher levels of psychological well-being (X=44.91) compared to those in the 40-49 age range (X=43.17).

One-Way ANOVA Test Based on the Education Variable

One-Way ANOVA was conducted to test whether there were differences in death anxiety, life satisfaction, and psychological well-being based on the level of education. The results of the analysis are presented in Table 5.

Table 5
Analysis of death anxiety, life satisfaction, and psychological well-being scores by educational level DA: Death Anxiety,LS: Life Satisfaction, PWB: Psychological Well-Being

	Educational Level	N	X	sd	Source Varience	Sum of Squares	df	Mean Squares	F	p
DA	Primary and Middle S	81	56,60	22,21	B.G.	3694,14	2	1847,07	3,83	,02
	High School and Associate Degree	91	48,89	21,47	W.G.	159582,07	331	482,12		
	Undergraduate and Postgraduate	162	48,82	22,09	∑	163276,28	333			
LS	Primary and Middle S	81	16,11	5,58	B.G.	64,93	2	32,46	1,43	,24
	High School and Associate Degree	91	15,74	4,76	W.G.	7491,79	331	22,63		
	Undergraduate and Postgraduate	162	16,75	4,28	∑	7556,72	333			
PWB	Primary and Middle S	81	44,53	8,44	B.G.	261,50	2	130,75	2,25	,11
	High School and Associate Degree	91	42,48	7,49	W.G.	19258,78	331	53,13		
	Undergraduate and Postgraduate	162	44,43	7,26	∑	19520,28	333			

When examining the obtained results, it is observed that only the level of death anxiety differs according to the variable of education level ($F=3.83$; $p<.05$). It was determined that the levels of life satisfaction and psychological well-being do not show a significant difference according to the variable of education level ($p>.05$). Based on this information, the post-hoc analysis technique was used to determine which groups the difference originated from. To decide which of the post-hoc multiple comparison tests to use, the Levene's test was conducted. Due to the homogeneity of variances, the Tukey test was used. The analysis results obtained from the Tukey test are presented in Table 6.

Table 6
Comparison of death anxiety levels by education level categories

Post Hoc Testi	Educational Level	Educational Level	Mean Differences	p
Tukey Test	Primary and Middle School	High School and Associate Degree	7,71483	,06
		Undergraduate and Postgraduate	7,78395*	,03
	High School and Associate Degree	Primary and Middle School	-7,71483	,06
		Undergraduate and Postgraduate	0,06912	1,00
	Undergraduate and Postgraduate	Primary and Middle School	-7,78395*	,03
		High School and Associate Degree	2,87647	1,00

As seen in Table 6, individuals with a higher education level (bachelor's degree or higher) have significantly lower levels of death anxiety compared to those with lower education levels (elementary or middle school) ($p < .05$).

Pearson Product-Moment Correlation Analysis

Pearson Product-Moment Correlation Analysis was conducted to determine the degree and strength of the relationships between the variables of death anxiety, life satisfaction, and psychological well-being. The analysis results are presented in Table 7.

Table 7
Pearson product-moment correlation analysis showing the relationships between death Anxiety, life satisfaction, and psychological well-being

Variables	1	2	3
Death Anxiety	1	-,09	-,17**
Life Satisfaction		1	,63**
Psyhological Well-Being			1

P<0.01

According to the obtained findings, there is a weakly negative significantcorrelation between death anxiety and psychological well-being (r= -,17; p<.01), a strong positive correlation between life satisfaction and psychological well-being (r=,63; p<.01). There is no significant relationship between death anxiety and life satisfaction.

Multiple Linear Regression Analysis

The results of the multiple linear regression analysis conducted to predict the psychological well-being levels of individuals in middle adulthood based on their death anxiety and life satisfaction are presented in Table 8.

Table 8
Multiple linear regression analysis for predicting psychological well-being by death anxiety and life satisfaction scores

Variable	B	Standard error	β	t	p	Multiple r	Partial r
Constant	29,59	1,43	-	20,75	,00		
Death Anxiety	-,04	,02	-,11	-2,64	,01	-,17	-,14
Life Satisfaction	1	,07	,62	14,67	,00	,63	,63

R=,64 R^2= ,41
$F_{(2,331)}$= 115,28 p=,000

The findings indicate that death anxiety and life satisfaction scores significantly predict psychological well-being scores ($F = 115.28$; $p < 0.01$). As stated in Table 8, it was found that the combination of individuals' death anxiety and life satisfaction scores explains approximately 41% of the total variance. According to the standardized regression coefficient (β), the relative importance of thepredictor variables on psychological well-being is as follows: life satisfaction and death anxiety. Life satisfaction positively and significantly predicts psychological well-being, while death anxiety negatively and significantly predicts psychological well-being.

Discussion

In this study, we examined whether there were differences in death anxiety, life satisfaction, and psychological well-being among middle-aged individuals based on gender, age, and educational level. Additionally, we examinedthe relationships between death anxiety, life satisfaction, and psychological well-being.

According to the findings of the study, it has been determined that in middle adulthood, death anxiety does not significantly vary with age, but it does differ significantly according to gender and educational status. It was found that women have a higher level of death anxiety than men. The identification of which groups the significant difference in educational status originates from revealed that the difference stems from the primary-secondary school and bachelor's-postgraduate groups. Individuals with a bachelor's-postgraduate level of education were found to experience a lower level of death anxiety compared to those with a primary-secondary school education. When reviewing the literature in the field, studies supporting the results of this research, showing that death anxiety differs according togender and is higher in women compared to men, have been encountered more frequently (Keller et al., 1984; Kimter & Köftegül, 2017; Seyhan, 2015; Yüksel et al., 2017). This situation can be interpreted as women being more likely to feel death anxiety compared to men, or it may be due to women being more capable of expressing their emotions than men. In other words, men may experience death anxiety to the same extent as women but may not express it outwardly.

When examining studies that explore the relationship between death anxiety and age variable, conflicting results have been observed (Gesser et al., 1988; Russac et al., 2007; Yüksel et al., 2017). Russac et al. (2007) concluded that death exhibits fluctuating patterns in relation to age. Regardless of age, experiences such as having faced death previously, traumatic encounters related to death, or illness can also influence death anxiety. Considering the studies that examine death anxiety in relation to educational level, it has been observed that a higher level of education is associated with lower levels of death anxiety, similar to the findings in this study (Erdoğdu &

Özkan, 2007), or that there is no significant relationship between the two (Kimter & Köftegül, 2017; Yüksel et al., 2017). Due to the diversity in results, it is thought that death anxiety may be more closely related to accepting death rather than factors such as age, gender, or educational level.

In this study, it was determined that the life satisfaction of middle-aged individuals does not vary significantly according toage, gender, or educational status. The results of this study were compared with existing studies in the field. Parmaksız (2020) conducted a study with a sample group consisting of adult individuals and obtained findings parallel to this study, concluding that life satisfaction does not differ by gender and educational status. Demirel (2018), in a study involving adult individuals, found that life satisfaction does not vary according to age and gender but does differ according to educational status, with those who have completed primary school reporting higher life satisfaction compared to those with college or university degrees. One reason for this could be that life satisfaction may be influenced by factors other than age, gender, and educational status, such as health and economic conditions.Since the measurement tool used in the study examines life satisfaction in a single dimension, the study may not have provided a comprehensive assessment of life satisfaction along with different dimensions.

According to the findings obtained from this study, psychological well-being in middle-aged individuals does not differ significantly according to gender and educational status, but it does vary significantly according to age. Individuals in the 50-59 age range were found to have higher levels of psychological well-being compared to those in the 40-49 age range. In contrast to the findings in this study, Tura (2019) conducted a study where he found that psychological well-being varies according to educational status, with individuals having a postgraduate education level reporting significantly higher psychological well-being compared to those with a high school education level.While there are studies in the literature that show psychological well-being differs significantly according to age and gender, there are also studies that indicate no significant differences (Diener & Suh, 1997; Eryılmaz & Ercan, 2011; Kocaman, 2019; Tura, 2019; Xing & Huang, 2014). It is believed that these discrepancies in the literature may be due to social or financial factors not accounted for as variables in the studies, and it is suggested that future research on other variables should shed light on this area.

When examining the relationships between death anxiety, life satisfaction, and psychological well-being, this study found a weak negative relationship between death anxiety and psychological well-being, whereas a strong positive relationship existed between life satisfaction and psychological well-being. However, no significant relationship was found between death anxiety and life satisfaction.

Additionally, when assessing the extent to which death anxiety and life satisfaction predict psychological well-being, it was determined that the combination of death anxiety and life satisfaction accounted for approximately 41% of the total variance. The predictive power of life satisfaction (positive) and death anxiety (negative) on psychological well-being was observed.In the literature, there are studies that support the results of this study, indicating that there is no significant relationship between death anxiety and life satisfaction (Sağırer, 2021; Toplanır, 2018). However, contrary to this result, there are studies that report significant negative relationships (Arslan, 2019; Ekşi et al., 2021; Given & Range, 1990; Hululular, 2019; Roshani, 2012; Tate, 1983; Taghiabadi et al., 2017; Xie & Liu, 2022). Özer et al. (2021) also conducted a study on perceived COVID-19 risk among healthcare workers, where they found no relationship between death anxiety and life satisfaction, a low-level negative relationship between death anxiety and psychological well-being, and a moderate positive relationship between life satisfaction and psychological well-being. The results of Özer et al. (2021) research align with the findings in this study.

In conclusion, this study has revealed that death anxiety and life satisfaction serve as predictors of psychological well-being in middle adulthood. According to Erikson (1993) and his psychosocial development theory, individuals in the final stage of development may experience either ego integrity or despair. During this stage, individuals engage in a general evaluation of their lives, which can lead to either a positive continuation of the aging process or a sense of hopelessness driven by regrets of the past. Achieving life satisfaction becomes crucial for ego integrity at this stage. Failure to accept one's past and to resolve personality crises by maintaining ego integrity negatively impacts psychological functioning (Rylands & Rickwood, 2001). Additionally, when ego integrity is not achieved in the final stage of life, it can be accompanied by a fear of death (Erikson, 1993). Based on all these, conducting interventions aimed at reducing death anxiety and promoting life satisfaction (such as existential-based individual/group therapies, psychoeducation, etc.) can contribute to individuals' psychological well-being.

Although this study is thought to contribute to the literature by providing insights into middle-aged individuals, it also has certain limitations. The reasons behind higher death anxiety in women compared to men and how death is perceived differently according to gender were not explored in this research. Future studies could delve deeper into this by using qualitative research methods to investigate how death is perceived by both women and men, considering the gender differences in death anxiety.Furthermore, this study only examined the relationship between death anxiety and age, gender, and educational status without exploring the influencing factors on death anxiety during this stage of life. Identifying the factors that influence death anxiety during middle adulthood can contribute to the content of intervention

programs. Middle-aged individuals may struggle with accepting the transition from youth to old age. Bearing witness to the aging and eventual deaths of their own parents may lead them to reconsider and become anxious about death. Therefore, future research could assess the relationship between attitudes toward old age and death anxiety. Additionally, it may be worthwhile to investigate the relationship between death anxiety, intolerance of uncertainty, and cognitive flexibility in middle-aged individuals. Studies in this area could help individuals enter old age positively and contribute to their successful aging process by providing tools to deal with uncertainty and enhance cognitive flexibility.

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References

Arslan, A. (2019). Üniversite öğrencilerinde yaşam doyumu ile ölüm kaygısı arasındaki ilişkininin incelenmesi [Examining the relationship between life satisfaction and death anxiety among university students]. *Eğitim ve Toplum Araştırmaları Dergisi*, *6*(1), 113-129.

Assari, S. & Lankarani, M. M. (2016). Race and gender differences in correlates of death anxiety among elderly in the United States. *Iranian Journal of Psychiatry and Behavioral Sciences*, *10*(2), 1–7. https://doi.org/10.17795/ijpbs-2024

Bakırtaş, T. (2018). Varoluşçu psikoterapi (I.D. Yalom) [Existential psychotherapy (I.D. Yalom)]. Çukurova Üniversitesi İlahiyat *Fakültesi Dergisi (ÇÜİFD)*, *18*(1), 645-649.https://doi.org/10.30627/cuilah.440736

Dadfar, M., Bahrami, F., Noghabi, F. S., & Askari, M. (2016). Relationship between religious spiritual well-being and death anxiety in Iranian elders. *International Journal of Medical Research & Health Sciences*, *5*(6), 283-287.

Dağlı, A., & Baysal, N. (2016). Yaşam Doyumu Ölçeğinin Türkçe'ye uyarlanması: Geçerlik ve güvenirlik çalışması [Adaptation of the Life Satisfaction Scale to Turkish: A validity and reliability study]. *Elektronik Sosyal Bilimler Dergisi*, *15*(59), 1250-1262. https://doi.org/10.17755/esosder.263229

Demir, R., Tanhan, A., Çiçek, İ., Yerlikaya, İ., Kurt, S. Ç., & Ünverdi, B. (2021). Yaşam kalitesinin yordayıcıları olarak psikolojik iyi oluş ve yaşam doyumu [Predictors of quality of life: Psychological well-being and life satisfaction]. *Yaşadıkça Eğitim*, *35*(1), 192-206. https://doi.org/10.33308/26674874.2021351256

Demirel, C. (2018). *Yetişkinlerde bağlanma stillerinin mutluluk, psikolojik iyi oluş ve depresyon ile ilişkisinin* incelenmesi [The relationship between attachment styles in adults and happiness, psychological well-being, and depression] (Publication No. 490573) [Master's thesis, University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Diener, E. D.,& Suh, M. E. (1997). Subjective well-being and age: An international analysis. *Annual Review of Gerontology and Geriatrics*, *17*(1), 304-324. https://doi.org/10.1891/0198-8794.17.1.304

Diener, E., Scollon, C. N., & Lucas, R. E. (2009). The evolving concept of subjective well-being: The multifaceted nature of happiness. *Social Indicators Research Series*, *39*, 67-100. https://doi.org/10.1007/978-90-481-2354-4_4

Ekşi, H., Çelebi, Ç. D., & Şahin, Ş. Ö. (2021). The mediating role of death anxiety in the relationship between successful aging and life satisfaction. *Journal of Human and Social Sciences*, *4*(1), 33-44. https://doi.org/10.53048/johass.918591

Erdoğdu, M. Y., & Özkan, M. (2007). Farklı dini inanışlardaki bireylerin ölüm kaygıları ile ruhsal belirtiler ve sosyo-demografik değişkenler arasındaki ilişkiler [Relationships between death anxiety, mental symptoms, and socio-demographic variables among individuals with different religious beliefs]. *Journal of Turgut Ozal Medical Center*, *14*(3), 171-179.

Erikson, E. H. (1993). *Childhood and society*. WW Norton & Company.

Erkuş, A. (2005). *Bilimsel araştırma sarmalı* [The spiral of scientific research]. Seçkin.

Eryılmaz, A., & Ercan, L. (2011). Öznel iyi oluşun cinsiyet, yaş grupları ve kişilik özellikleri açısından incelenmesi [Examination of subjective well-being in terms of gender, age groups, and personality traits]. *Turkish Psychological Counseling & Guidance Journal*, *4*(36), 139-149.

Feng, Y., Liu, X., Lin, T., Luo, B., Mou, Q., Ren, J., & Chen, J. (2021). Exploring the relationship between spiritual well-being and death anxiety in patients with gynecological cancer: a cross-section study. *BMC Palliative Care*, *20*(1), 1-10. https://doi.org/10.1186/s12904-021-00778-3

Gesser, G., Wong, P. T., & Reker, G. T. (1988). Death attitudes across the life-span: The development and validation of the Death Attitude Profile (DAP). *OMEGA-Journal of Death and Dying*, *18*(2), 113-128. https://doi.org/10.2190/0DQB-7Q1E-2BER-H6YC

Given, J. E., & Range, L. M. (1990). Life satisfaction and death anxiety in elderly nursing home and public housing residents. *Journal of Applied Gerontology*, *9*(2), 224-229. https://doi.org/10.1177/073346489000900208

Hökelekli, H. (1991). Ölüm ve ölüm ötesi psikolojisi [Death and the psychology of the afterlife]. *Uludağ Üniversitesi İlahiyat Fakültesi Dergisi*, *3*(3), 151-165.

Hululular, G. (2019). *Orta yaşlı bireylerde yaşam doyumunu etkileyen umutsuzluk depresyon ve ölüm kaygısının incelenmesi* [An examination of the factors influencing life satisfaction in middle-aged individuals: Hopelessness, depression, and death anxiety.] [Master's thesis, Yakın Doğu University]. http://docs.neu.edu.tr/library/6718838603.pdf

Karakuş, G., Öztürk, Z., & Tamam, L. (2012). Ölüm ve ölüm kaygısı [Death and death anxiety]. *Arşiv Kaynak Tarama Dergisi*, *21*(1), 42-79.

Keller, J. W., Sherry, D., & Piotrowski, C. (1984). Perspectives on death: A developmental study. *The Journal of Psychology, 116*(1), 137–142. https://doi.org/10.1080/00223980.1984.9923628

Keyes, C. L., Smhmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The emprical encounter of two traditions. *Journal of Personality and Social Psychology*, *82*(6), 1007-1022. https://doi.org/10.1037/0022-3514.82.6.1007

Kimter, N., & Köftegül, Ö. (2017). Yetişkinlerde ölüm kaygısı ile dindarlık arasındaki ilişki üzerine bir inceleme [An examination of the relationship between death anxiety and religiosity in adults]. *Sakarya Üniversitesi İlahiyat Fakültesi Dergisi*, *19*(36), 55-82. http://dx.doi.org/10.17335/sakaifd.327235

Kocaman, E. N. (2019). *Bir grup yetişkinde umut ve psikolojik iyi oluş arasındaki ilişkinin farklı değişkenler açısından incelenmesi* [An investigation of the relationship between hope and psychological well-being in a group of adults from different perspectives] (Publication No. 541377) [Master's thesis, İstanbul Sabahattin Zaim University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Koivumaa-Honkanen, H., Kaprio, J., Honkanen, R., Viinamäki, H., & Koskenvuo, M. (2004). Life satisfaction and depression in a 15-year follow-up of healthy adults. *Social Psychiatry and Psychiatric Epidemiology*, *39*, 994-999. https://doi.org/10.1007/s00127-004-0833-6

Kurt Magrebi, T., & Akçay, S. (2020). Huzurevinde kalan yaşlılarda ölüm kaygısı ve ölüme ilişkin depresyon düzeylerinin incelenmesi [Examination of death anxiety and levels of depression related to death in elderly residents in nursing homes]. *Elektronik Sosyal Bilimler Dergisi*, *19*(76), 2100-2118. https://doi.org/10.17755/esosder.631336

Küçük, M. (2020). *Yetişkinlerin öz şefkat, bağlanma stilleri ve psikolojik iyi oluş özelliklerinin incelenmesi* [An investigation of self-compassion, attachment styles, and psychological well-being characteristics in adults] [Master's thesis, İstanbul Gelişim University]. https://acikerisim.gelisim.edu.tr/xmlui/handle/11363/2531

Levinson, D. J. (1986). A conception of adult development. *American Psychologist*, *41*(1), 3. https://doi.org/10.1037/0003-066X.41.1.3

Lockhart, L. K., Bookwala, J., Fagerlin, A., Coppola, K. M., Ditto, P. H., Danks, J. H., & Smucker, W.D. (2001). Older adults' attitudes toward death: links to perceptions of health and concerns about end-of-life issues. *Omega (Westport), 43*(4), 331–347. https://doi.org/10.2190/09B5-CCWE-D5GA-F0MA

Mansori, Y. K., Dolatian, M., Shams, J., & Nasiri, M. (2018). The relationship between death anxiety and spiritual well-being in patients with gynecologic cancer. *Advances in Nursing & Midwifery*, *27*(3), 28-34.

Myers, D. G., & Diener, E. (1995). Who is happy? *Psychological Science*, *6*(1), 10-19. https://doi.org/10.1111/j.1467-9280.1995.tb00298.x

Özdamar, K. (2002). *Paket programlar ile istatiksel veri analizi: SPSS-MINITAB (Çok değişkenli analizler)* [Statistical data analysis with package programs: SPSS-MINITAB (Multivariate analyses)]. Kaan.

Özen, D. (2008). *Huzurevinde yaşayan yaşlılarda ölüm kaygısının günlük yaşam işlevlerine etkisi* [The Effect of Death Anxiety on Activities of Daily Living in Older Adults Living in Rest Home] (Publication No. 203411) [Master's thesis, Haliç University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Özer, Ö., Özkan, O., Özmen, S., & Erçoban, N. (2021). Investigation of the effect of COVID-19 perceived risk on death anxiety, satisfaction with life, and psychological well-being. *OMEGA-Journal of Death and Dying*, 1-19. https://doi.org/10.1177/00302228211026169

Pallant, J. (2016). *SPSS kullanma kılavuzu: SPSS ile adım adım veri analizi* [SPSS survival manual: A step by step guide to data analysis with SPSS] (S. Balcı and B. Ahi, Trans.). Anı.

Parmaksız, İ. (2020). Yaşam doyumuyla bilinçli farkındalık arasındaki ilişki: Yetişkinler üzerine bir araştırma [The relationship between life satisfaction and mindfulness: A study on adults]. *Uludağ Üniversitesi Eğitim Fakültesi Dergisi*, *33*(1), 157-176. https://doi.org/10.19171/uefad.587932

Peterson, C., Park, N., & Seligman, M. E. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, *6*, 25-41.https://doi.org/10.1007/s10902-004-1278-z

Roshani, K. (2012). Relationship between religious beliefs and life satisfaction with death anxiety in the elderly. *Annals of Biological Research*, *3*(9), 4400-4405.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Rylands, K. J., & Rickwood, D. J. (2001). Ego-integrity versus ego-despair: The effect of "accepting the past" on depression in older women. *The International Journal of Aging and Human Development*, *53*(1), 75-89. https://doi.org/10.2190/1LN2-J92C-2168-THPH

Russac, R. J., Gatliff, C., Reece, M., & Spottswood, D. (2007). Death Anxiety across the Adult Years: An Examination of Age and Gender Effects. *Death Studies, 31*(6), 549–561. https://doi.org/10.1080/07481180701356936

Sağırer, G. C. (2021). Ölüm kaygısı, yaşam doyumu ve covid-19 korkusu ilişkisi [The relationship between death anxiety, life satisfaction, and covid-19 fear] (Publication No. 722172) [Master's thesis, Çağ University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Sarıkaya, Y. (2013). *Ölüm kaygısı ölçeği geliştirilmesi: Geçerlik ve güvenirlik çalışması* [The development, validity and reliability of the death anxiety scale] (Publication No. 327451) [Master's thesis, Gaziosmanpaşa University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Seyhan, B. Y. (2015). Ölüm kaygısı ve dua tutumu üzerine bir araştırma [An investigation on death anxiety and prayer attitude]. *Electronic Turkish Studies*, *10*(2), 863-882. http://dx.doi.org/10.7827/TurkishStudies.7948

Sezer, S., & Saya, P. (2009). Gelişimsel açıdan ölüm kavramı [The concept of death from a developmental perspective]. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, (13), 151-165.

Shirkavand, L., Abbaszadeh, A., Borhani, F., & Momenyan, S. (2018). Correlation between spiritual well-being with satisfaction with life and death anxiety among elderlies suffering from cancer. *Electronic Journal of General Medicine*, *15*(3), 1-7. https://doi.org/10.29333/ejgm/85501

Tabachnick, B.G., & Fidell, L.S. (2013). *Using multivariate statistics* (6th ed.). Pearson Education.

Taghiabadi, M., Kavosi, A., Mirhafez, S. R., Keshvari, M., & Mehrabi, T. (2017). The association between death anxiety with spiritual experiences and life satisfaction in elderly people. *Electronic Physician*, *9*(3), 3980. https://doi.org/10.19082/3980

Tanhan, F. (2007). *Ölüm kaygısı ile baş etme eğitiminin ölüm kaygısı ve psikolojik iyi olma düzeyine etkisi* [The effects of coping with death anxiety education programme on death anxieties and psychological well-beings] (Publication No. 235704) [Doctoral dissertation, Ankara University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Tate, L. A. (1983). Life satisfaction and death anxiety in aged women. *The International Journal of Aging and Human Development*, *15*(4), 299-306. https://doi.org/10.2190/G50V-7K1Q-G3XH-XABV

Telef, B. B. (2013). Psikolojik iyi oluş ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması [The psychological well-being scale: Adaptation to Turkish, validity, and reliability study]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *28*(3), 374-384.

Toplanır, E. (2018). *Yaşam doyumu, kendini gerçekleştirme ve ölüm korkusu arasındaki ilişkinin incelenmesi* [An investigation of the relationship between life satisfaction, self-actualization, and death fear] (Publication No. 512890) [Master's thesis, İstanbul Haliç University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Tura, H. (2019). *Dindarlık, affetme ve psikolojik iyi oluş ilişkisi* [The relationship between religiosity, forgiveness and psychological well-being] (Publication No. 567401) [Master's thesis, Marmara University]. Yüksek Öğretim Kurulu Ulusal Tez Merkezi.

Tutar, H., & Erdem, A. T. (2022). *Bilimsel araştırma yöntemleri* [Scientific Research Methods] (2nd ed.). Seçkin.

Veenhoven, R. (1996). *The study of life satisfaction*. Eötvös University Press. Retrieved from http://hdl.handle.net/1765/16311

Xie, Y., & Liu, B. (2022). Life Satisfaction and death anxiety among Chinese rural elderly: Moderating effects of gender, age and spouse. *Life*, *5*(3).

Xing, Z., & Huang, L. (2014). The relationship between age and subjective well-being: Evidence from five capital cities in mainland China. *Social Indicators Research*, *117*, 743-756. https://doi.org/10.1007/s11205-013-0396-6

Yalom, I. D. (1980). *Existential psychotherapy.* Basic Books.

Yalom, I. (2001). *Varoluşçu psikoterapi* [Existential psychotherapy] (Z. İyidoğan Babayiğit, Trans.). Kabalcı.

Yüksel, M. Y., Güneş, F., & Akdağ, C. (2017). Investigation of the death anxiety and meaning in life levels among middle-aged adults. *Spiritual Psychology and Counseling*, *2*(2), 165-181. https://doi.org/10.12738/spc.2017.2.0024

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Research Article

Rethinking Cognitive Psycho-education -4T Model- in the Psychotherapy of Religious Obsessive-Compulsive Disorder: Report of Three Resistant Cases

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Abstract

In religious obsessive-compulsive disorder (OCD), the current cognitive model does not seem to be convincing enough for patients to understand the source of their obsessions and to distinguish between their obsessions and their religious beliefs (iman) and values, which affects secure relationships in therapy. Therefore, there is a need for both religious sensitivity and model proposals to solve the problem of lack of persuasiveness of cognitive psycho-education. From this perspective, the present case study uses the 4T model (tahayyul (imagination), tasawwur (conceptualization/detailed imagination), taakkul (reasoning/reflecting), tasdiq (confirmation)), which is a hierarchical cognitive model and adapted with the inspirations from the texts of Muslim scholars (specifically from Nursi's text of Treatise on Scrupulosity) on cognitive processes. A case report of three individuals with religious OCD is presented to demonstrate the effectiveness of this treatment method. Symptoms were measured in therapy using the Yale-Brown Obsessive Compulsive Scale, Beck Depression Inventory, Beck Anxiety Inventory, and Padua Inventory scales. Feedback was obtained for post-intervention assessment. The participants received 30 individual face-to-face therapy sessions, one per week, with an average duration of 50 minutes per session, and follow-up sessions were also conducted after the completion of treatment. The results from the three cases of individuals with religiously resistant OCD symptoms, which resulted in improvement on all scale scores, demonstrate that the model is substantially effective, particularly in addressing thought-action fusion (TAF). Furthermore, the thought hierarchy offered by the model is practical and compelling in the process of cognitive restructuring.

Keywords:
Religious OCD (Scrupulosity) • Cognitive • Behavioral • Therapy • 4T Model

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Introduction

Obsessive-compulsive disorder (OCD) is distinguished by two primary features: Obsessions and compulsions. Obsessions are described as recurring, intrusive, unwanted thoughts, ideas or impulses, and compulsions are described as repetitive, ritualistic behavioral or mental actions that attempt to decrease, neutralize, or prevent harm associated with these obsessions (American Psychiatric Association, 2013; Giasuddin & Hossain, 2020).

It has been recognized by the World Health Organization as one of the top ten most disabling disorders (World Health Organization, 2001; Murray, 1996), and is highly comorbid with other psychiatric disorders such as depression, generalized anxiety, or panic disorders (Tukel et al., 2002; Torres, 2006; Van Oudheusden et al., 2020; Sadock et al., 2021).

The presence of persistent and distressing intrusive thoughts is a fundamental characteristic of OCD and can even be seen in people without a diagnosis, for example, one study found obsessional experiences in 99 (80%) of 124 non-diagnosed/normal people from different professions (Rachman, 1978). These intrusive and distressing thoughts might be misinterpreted as excessively important, leading to an inflated sense of responsibility for one's own thoughts (Rachman, 1998; Clark, 2019). This inflated responsibility is considered a significant contributor to the development and perpetuation of obsessive-compulsive symptoms (Bouchard, 1999; Wilson, 1999; Mantz & Abbott, 2017; Collins & Coles, 2018). Individuals with a heightened sense of inflated responsibility reportedly have a greater likelihood of engaging in thought-action fusion (TAF), which is linked to cognitive bias that can occur in the development of obsessive thoughts (Amir, 2001; Ciftci & Kuru, 2013).

Thought-action fusion (TAF), refers to the responsibility for assuming inappropriate everyday relationships between one's own thoughts and external reality, either a) as the moral equivalent of physical actions (TAF-morality, e.g., wishing to harm someone is equivalent to actually harming them) or b) by making a physical outcome more likely (TAF-probability, e.g., thinking about a particular situation increases the likelihood that it will actually happen) (Williams et al., 2013). There are some differences in the approach to the importance of regular/typical intrusive thoughts. For example, in Christianity, thoughts are considered morally equivalent to actions, whereas in Judaism thoughts are given less importance than actions (Siev, 2007). Interestingly, Islam places both thought and action at the optimal level of importance in the human life cycle. In Islam, both actions/deeds and intentions play a role in the results but in different layers. For example, in order to be responsible for evil, both the intention and the performance of the action/deed are required, because intending evil and not doing it does not bring evil, but it brings good, whereas in order to be responsible for good, only the intention is sufficient (Besiroglu et al., 2014).

The most discussed psychotherapies in the treatment of OCD are Cognitive Behavioral Therapy (CBT), Acceptance and Commitment Therapy (ACT), and Exposure and Response Prevention (ERP) (Koran et al., 2007; Mathes, 2015; Ponniah, 2013; Twohig et al., 2018). According to these models, maladaptive or metacognitive beliefs combined with intrusive thoughts can lead to an increase in anxiety, and the person may engage in compulsions as a strategy to reduce this anxiety, resulting in the vicious cycle of OCD. Both CBT and ACT accept intrusive thoughts as normal experiences (Duarte, 2021; Mathes, 2015) and do not attach importance to the content and frequency of specific thoughts (Twohig, 2015). Yet, according to these models, there is no clarity about which thoughts should be considered important or neutral/normal. Moreover, in "disengagements", they suggest devaluing the importance and effectiveness of the thought in order to change the interpretations of intrusive thoughts (Healy et al., 2008).

Treatment of Obsessive-Compulsive Disorder

The behavioral treatment of OCD which is based on the learning model of obsessions and compulsions and called as ERP, has been used since the 1970s (Clark, 1999). Although ERP was found to be effective in washing and checking compulsions (Stanley, 1995; Starcevic & Brakoulias, 2008), hoarding, primary obsessional slowness, symmetry and ordering compulsions, religious and repugnant obsessions were reported to be less responsive to ERP (Clark, 2005). Furthermore, a substantial number of patients (20-30%) do not commence with the therapy of ERP or give up such treatment approaches very early (Stanley, 1995). Thus, cognitive restructuring interventions either alone or in conjunction with ERP have been developed in the last two decades, aiming to encourage patient participation, decrease high dropout rates, and to be effective in treatment of obsessions without overt compulsions (Salkovskis, 1985; Abramowitz, 2006; Koran et al., 2007). Abramowitz et al. (2005) was the first who argued that cognitive intervention has little effect over ERP alone. A review of 45 randomized clinical trials (Ponniah, 2013) reported that both CBT and ERP approaches were effective in the treatment of OCD. Nevertheless, the authors have questioned whether adding cognitive restructuring increases the efficacy of behavioral interventions or not? In the last decade, new wave cognitive approaches including mindfulness-based therapies referencing TAF, have encouraged the patients not to engage with their obsessions and let them decay naturally instead of using compulsive rituals (Fisher, 2009). Thus, the obsessions are not being worked through in a comprehensive way via 'detached mindfulness' within these new wave therapies. But, as mentioned above, the concept of 'detachments' implies a devaluation of the importance and effectiveness of thought in altering the interpretation of intrusive thoughts and lacks a convincing etiological explanation.

Religious OCD and Treatment

Religious OCD, also referred to as "scrupulosity," is a subtype of OCD typified by persistent doubts and uncertainties about sin and guilt along with an overwhelming need to participate in excessive religious activities (Abramowitz et al., 2002). In addition to the shortcomings mentioned above, religious OCD, has its own challenges (for example, the client with religious OCD may not feel safe in terms of religious knowledge in the therapy or they have difficulty in distinguishing obsessions from religious beliefs) has increased the need for religious models (Huppert & Siev, 2010; Siev et al., 2017; Toprak, 2018). As the literature is analyzed, the CBT oriented treatments directed to religious OCD are sorted into two main categories by Toprak (2022) which are the religiously sensitive regular CBT (Abramowitz et al., 2004; Abramowitz & Jacoby, 2014; Peris & Rozenman, 2017; Siev & Huppert, 2017; Abramowitz & Hellberg, 2020) and original treatments weaving religious knowledge and practices into the framework of CBT (Akuchekian et al., 2015; Aouchekian et al., 2017; Md Rosli at al., 2018; Md Rosli et al., 2019). For example, Religious Integrated CBT is the first manualized model of such an integrative treatment in the field of religious-spiritual integrated psychotherapies (Pearce et al., 2015). Another unique example, the 4T model which is a psycho-educational cognitive model, offers a new cognitive model, unlike other models that do not have their own original cognitive model (Toprak & Emül, 2016). Up to now, the 4T model has been used in some studies. One of them integrated the 4T model into group cognitive behavioral therapy (GCBT) and examined the effectiveness of this integration on two groups, one receiving only GCBT and the other receiving 4T model integrated GCBT. Result of the study showed that the 4T model integrated group made significant progress as much as the other group (Toprak, 2022). The other study conducted a 5-session individual psycho-educational intervention, involving only the 4T model, to a patient with OCD who received CBT and still had difficulties, and observed that 4T model intervention has a positive projection on the patient (Karakan & Toprak, 2023).

In the current study, the '4T model,' incorporates religious sensitivity and presents an alternative perspective regarding cognitive structure.

4T Model

The 4T Model is a psycho-educational cognition model developed by Toprak based on the works of Muslim scholars, especially Nursi, on cognitive processes. It has been primarily used in OCD and especially religious OCD patients (Toprak & Emül, 2016; Toprak, 2022; Karakan & Toprak, 2023). In the process, it has also been used in trauma and related disorders. For example, in one study, following the sessions with a client (suffering from post-traumatic stress disorder (PTSD) experiences sexual assaults and has religious guilt and feelings of unfairness, in which the 4T model,

repentance (tawbah) CBT and ACT are used (4T model and repentance (tawbah) is especially used to deal with beliefs in unfairness and to balance guilt and afterlife beliefs), it is found that there is a significant reducing in the PTSD symptoms of the client (Isik & Toprak, 2023).

The Muslim scholar Said Nursi[1], in his work "Treatise on Scrupulosity (Risalah Waswasah)", explains the etiology of "intrusive thoughts" in a broader sense (Nursi, 2008; Besiroglu, 2014). He emphasizes the hierarchical aspect of intrusive thoughts (Nursi, 2008), in contrast to the current explanation of contemporary therapy schools, which study intrusive thoughts on a continuum (Abramowitz, 2003). Moreover, although many Muslim scholars in the Ilm an Nafs (knowledge of self)[2] tradition have written about scrupulosity (waswasa) (Gazali, 1998; Beydavi; 2011; Belhi, 2012; Ibn Hazm, 2012; Er-Razi, 2019;), it is in Nursi's work that it is seen for the first time such extensive use of human cognitive structure and functioning to explain and intervene in scrupulosity (waswasah) processes and wrote his texts in a way that everyone could understand. At first Nursi explains the relationship between mind and heart on seven stages based on a continuum framework of "Dimağda Meratib-i Ilm"' (stages of knowledge in the mind): tahayyul (imagination), tasawwur (conceptualization), taakkul (reasoning / reflecting), tasdiq (confirmation), (these four stages are the functions of the mind) izân (submission), iltizam (full support) and itikat (commitment / devotion) (these three stages are the functions of the qalb (heart) (spirituality) (Nursi, 2010).[3][4][5]

> "There are stages of knowledge in the mind with different consequences that can be confused with each other. One first imagines (tahayyul) something, then grasps it, and gives it a form so that conceptualization (tasawwur) occurs. After that, you reason/reflect (taakkul) on it, then you confirm (tasdiq) it, then you become completely submitted (iz'ân) on it. Then they fully

1 Said Nursi (1878-1960) is a Muslim scholar whose comprehensive education spanned both madrasahs (traditional Muslim educational institutions) and a broad array of disciplines, encompassing religious studies, logic, philosophy, anatomy, mathematics, and physics. As a testament to this diverse education, his contributions bridge the chasm between traditional Islamic teachings and contemporary academic thought.

2 A discipline of Islamic tradition in which scholars of medicine, philosophy, sufis and revivalist work on human psychology and produce knowledge on this subject (Toprak, 2018).

3 The dictionary meaning of dimag is brain, the organ inside the skull, and is sometimes also used in the meaning of mind. It is thought that the term mind is more appropriate as the meaning of the term dimag in the original text, as it is understood today.

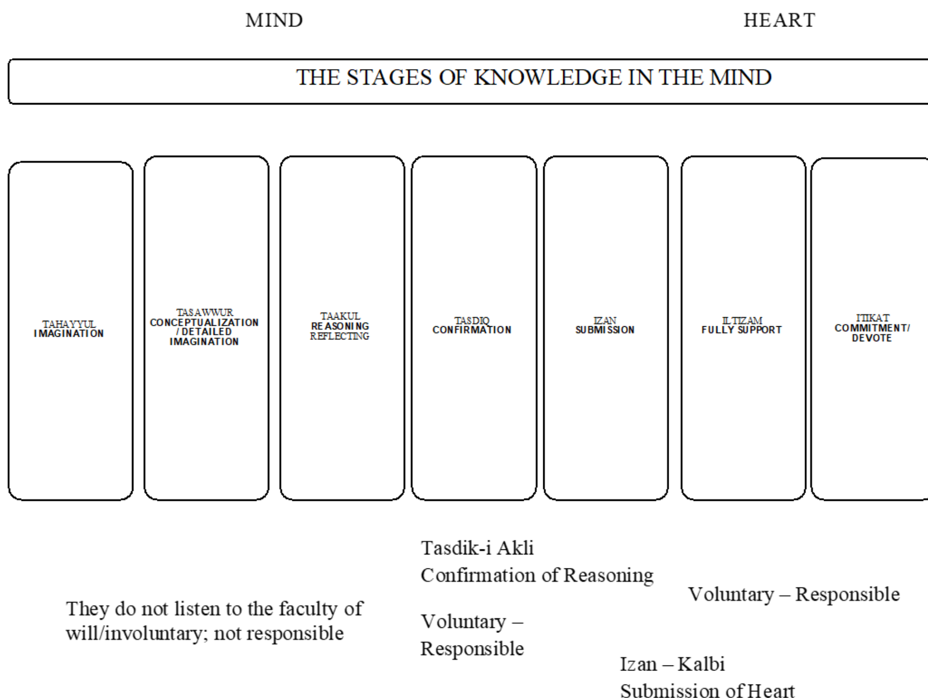
4 Here, in the first four stages (imagination [tahayyul], conceptualization [tasawwur], reasoning/reflecting [taakkul], and confirmation [tasdiq]), knowledge is formed by the mind's own internal processes, whereas in the submission (iz'ân) and subsequent stages (full support [iltizam] and commitment/devotion [itikat]), knowledge is formed with the contribution of the heart (qalb), but is ultimately stored in the mind (dimag) again.In more detail, both the processes of the mind (dhihn/dimag) and the heart (qalb) affect on tasdiq (confirmation), and confirmation with reason (tasdik-i akli) is followed by confirmation with heart (qalb) and thus belief (iman) and values are formed in the heart (qalb).

5 The qalb (heart) is one of the entity constituting the nafs/ene (self, core), which is the core essence of individuality, according to Ilm an nafs tradition (knowledge of self), and it establishes a link between the material body (jism/badan) and the metaphysical essence of the spirit (ruh), and it is the main decision center. The other entities constituting the nafs/ene (self) are body (jism/badan), which is the tangible manifestation, a corporeal facet of being, mind (dhihn/dimag), that is the abstract reasoning centre and located in the brain and imagination (tahayyul), conceptualization (tasawwur), memory (khafiza) and reasoning/reflecting (taakkul) are associated with it, conscience (wijdan), which transmits metaphysical information coming from the spirit (ruh) to the heart (qalb), spirit (ruh), that is an intangible essence defying confinement or precise definition, and finally powers (quwwah, explained below).(Toprak, 2021).

support (iltizam) it; then they become committed/devoted (itikat) to it. Their commitment/devotion (itikat) is different, and so is their full support (iltizam), each of which results in a different state or attitude: Steadfastness comes from commitment/devotion (itikat), while adherence comes from fully support (iltizam). Compliance comes from submission (iz'ân), advocacy comes from confirmation (tasdiq), and impartiality comes from reasoning/reflecting (taakkul), while no ideas are formed at the stage of conceptualization (tasawwur). If you remain at the stage of imagination (tahayyul), the result will be sophistry." (Nursi, 2010, pp. 718-719) (see Figure 1).

Figure 1.

Dimağda Meratib-i İlim (The Stages of Knowledge in The Mind)

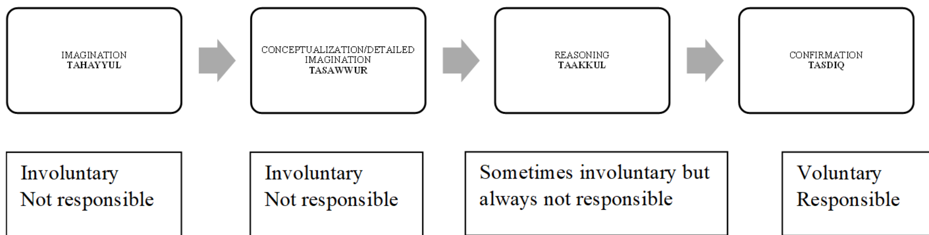


This passage outlines Said Nursi's general cognitive approach, emphasizing the concepts related to the mind and the special relationship between these concepts and scrupulosity. According to Said Nursi (2008, p.285)

> "Just as imagining (tahayyul) unbelief (kufr) is not unbelief (kufr), while concepting (tasawwur) misguidance is not misguidance, so reflecting (tafakkur) on misguidance is not misguidance. All imagining (tahayyul) and suspecting/assuming baselessly (tewehhum), concepting (tasawwur) and reflecting (tafakkur) are considered different from reasonable confirmation (tasdiq). They are free to a certain extent; they do not listen to the faculty of will; they are not included in the duties of religion. But confirmation (tasdiq) is not like that; it depends on a balance"[678]

Toprak (2016) offers an opportunity to employ cognitive therapy by restructuring interpretations without diminishing the significance and efficacy of one's thoughts, and developed the 4T model utilizing the stage of the mind: tahayyul (imagination), tasawwur (conceptualization/detailed imagination), taakkul (reasoning/reflecting), and tasdiq (confirmation). In this paper, the terms used to describe the different stages of the mind are translated. Tahayyul is defined as an image or imagination, which is involuntary and not under the individual's control. Tasawwur refers to conceptualization, the act of conceiving and/or detailed imagination, also involuntary and not under the responsibility of the person. Taakkul is the process of reasoning or reflecting, which can sometimes be voluntary but can also occur involuntarily. The individual is not responsible for this action. Finally, tasdiq is confirmation, which is a voluntary action, and the individual is responsible for executing it. It is referred to the "4T model (see figure 2)," an integrated restructuring approach for OCD (Toprak & Emül, 2016).

Figure 2.
4T Model



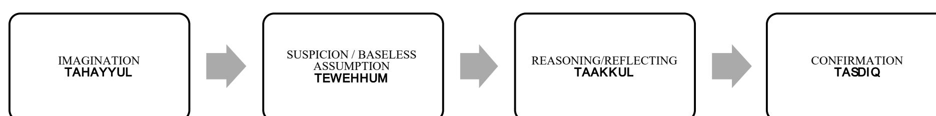
6 It is possible to find different references both in the literature and in Nursi's texts on how to understand terms in 4T. The term tahayyul (imagination) can be understood as imagination both in the Islamic literature and Nursi's text.However, tasawwur (conceptualization) is sometimes used as 'conceptualization' in the meaning of definition in logic, as a conceptualisation of definition, and sometimes as 'detailed imagination' in the meaning of a more detailed imagination Both of these meanings are preferred depending on the context.

7 Another matter is the terms of 'taakkul (reasoning/reflecting)' and 'tafakkur(reflection)'. In the literatue of Islamic sciences in general, 'taakkul (reasoning/reflecting)' is described by the term 'reasoning' as reasoning, as operating thought processes on a subject. This refers more to a logical thinking process. On the other hand, 'tafakkur (reflection) comes from the root 'fikr (idea)' and is described by the term 'reflection/contemplation', referring reflecting deeply on a subject (Isgandarova, 2019) with the capabilities of one's own inner experiences and feelings beyond logic (reflecting on the majesty of God's creation (Rothman & Coyle, 2023)). In his Works, Nursi sometimes uses taakkul (reasoning/reflecting) and tafakkur (reflection) as synonyms and sometimes in a way pointing to this difference. Both of them are used in this study not only synonymously but also differently depending on the context.

8 In the English translation of the texts of Nursi, concepts related to mental health have been negotiated by professionals and replaced with concepts that are considered more appropriate.

The model has undergone revisions unifying the concepts of tasawwur (conceptualization / detailed imagination) and tahayyul (imagination) as a single concept, also add the term tewehhum (suspicion / baseless assumption) in the 4T model.[9] (see Figure 3) This psycho-educational approach informs individuals that they bear no responsibility for their thoughts until they reach the "tasdiq (confirmation)" layer, and thus, it provides an understanding of the distinction of belief (iman) and values that can be formed as a result of confirmation (tasdiq) from other mental processes. Here, it was aimed to present cognitive psychotherapies for three cases of religious OCD by integrating the 4T model into an intrusive thought process. The practice was assumed to provide a broader cognitive explanation, consistent with religious values and could be useful in overcoming resistance.

Figure 3.
4T Model - revised final version in the further studies



Method

Research Design

The present study is a case study. Case studies, which involve detailed descriptions and analysis of individuals, typically use qualitative data. Many sources are used as data collection tools, including natural observations, archival records, interviews, and psychological tests. A clinical case study, on the other hand, often describes the implementation and outcomes of a particular treatment (Goz, 2021).

In this context, the results of a religion-focused psycho-education program using the 4T model in three resistant cases with religious OCD are presented. The measurement tools used before and after the therapy are Yale-Brown Obsessive Compulsive Scale, Padua Inventory, Beck Depression Inventory, and Beck Anxiety Inventory. The tests

9 The distinction between ''tasawwur (conceptualization/detailed imagination)" and ''tahayyul (imagination)" is considered redundant and the two are merged into a single concept, also the term ''tewehhum (suspicion/baseless assumption)" is added to the model, thus, especially doubt obssesions become easier to understand and explain. By substituting more meaningful terms like "tewehhum" "zan," and "suspicion/baseless asssumption" with less powerful ones like "tasawwur (conceptualization)" or "tasvir," this modification sought to simplify and boost the psychoeducational process (Toprak, 2021). In order to increase the relevance of the model, especially for religious psycho-education, religious concepts and knowledge were used more actively and the critical position of the concept of the heart (qalb) was crystallized.like "tewehhum" "zan," and "suspicion/baseless asssumption" with less powerful ones like "tasawwur (conceptualization)" or "tasvir," this modification sought to simplify and boost the psychoeducational process (Toprak, 2021). In order to increase the relevance of the model, especially for religious psycho-education, religious concepts and knowledge were used more actively and the critical position of the concept of the heart (qalb) was crystallized.psycho-education, religious concepts and knowledge were used more actively and the critical position of the concept of the heart (qalb) was crystallized.

were repeated after 10 sessions and the results were compared with the ones in the baseline visit. Participants were also asked to express their thoughts verbally and orally about what was beneficial to them and how. Participants received a total of 30 individual face-to-face therapy sessions, one session per week, with each session lasting an average of 50 minutes.

Participants

The study involved three participants diagnosed with religious OCD who were admitted to the psychiatric clinic of Cerrahpaşa Medical Faculty in February and April 2015. Their symptoms included religious obsessions, compulsions, and behaviors such as obsessional slowing, crying, avolition, anhedonia, and noncompulsive obsessions. The participants' ages ranged from 35 to 38, and the mean age was 36.33. One participant experienced depressive symptoms, while another reported anxiety and depressive symptoms in addition to OCD.

Data Collection Tools

Yale-brown obsessive compulsive scale (Y-BOCS)–self-report form. It is a self-report scale developed by Goodman et al. (1989), translated into Turkish by Turkcapar (2005) and validity-reliability study was performed by Kocoglu and Bahtiyar (2021). This scale aims to assess the subtypes and severity of obsessive-compulsive symptoms. Each of the 10 items in the scale is scored from 0 (no symptoms) to 4 (extreme symptoms) and the total score ranges from 0 to 40. 10 items of the scale are used to determine the total score; the sum of the first five items about obsessions and the sum of the second five items about compulsions are taken. Scores obtained from the scale are classified as 0-7 subclinical; 8-15 mild; 16-23 moderate; 24-31 severe; 32-40 very severe. In the validity and reliability study of the Turkish version, the Cronbach's alpha internal consistency coefficient was .96 for the total sample (Kocoglu & Bahtiyar, 2021).

Beck depression inventory (BDI). It is a 21-item self-report scale developed by Beck et al. (1961) to assess behavioral symptoms of depression. Each item is scored from 0 to 3. The total score obtained from the scale ranges from 0 to 63, and higher score indicates more severe depression. Hisli (1989) found that the Cronbach alpha internal consistency coefficient of the scale was .80 in the validity and reliability study of the Turkish version of the scale. According to the results of the study, the scale is a valid and reliable tool for measuring depression symptoms (Hisli, 1989).

Beck anxiety inventory (BAI). It is a 21-item self-report scale developed by Beck et al. (1988) to assess the severity of anxiety. Each item is scored from 0 to 3. The total score of the scale ranges from 0 to 63, and higher score indicates severe anxiety. Ulusoy et al (1998) found that the Cronbach alpha internal consistency coefficient

of the scale was .93 in their validity and reliability study of the Turkish version. The authors of the study concluded that the scale was a valid and reliable measure of anxiety severity (Ulusoy et al., 1998).

Padua inventory (PI). It is a self-report scale consisting of 60 questions which was developed by Sanavio (1988) to determine the severity and distribution of OCD symptoms. It has five sub-dimensions: cleanliness, preoccupation, impulsivity, control, and safety. Each item is scored from 0 to 4. The total score is obtained by summing the scores of all the subscales. An increase in the total score indicates an increase in the level of OCD symptoms. Besiroglu et al. (2005) found that the Cronbach alpha internal consistency coefficient of the scale was .95 in their validity and reliability study of the Turkish version (Besiroglu et al., 2005).

Treatment

During the therapy, the steps described by Clark (1999) for the cognitive-behavioral treatment model of OCD was followed which are: a) education, b) normalization of intrusions, accepting that thoughts lie on a continuum from normal to pathological, c) cognitive restructuring of faulty appraisals of intrusions, d) behavioral experimentation and alternative interpretation of obsessions, e) correction of dysfunctional beliefs (Clark, 1999). After psycho-education of the cognitive model of OCD, the 4T model as a hierarchical model of intrusions according to their underlying mechanisms in the mind was explained. As mentioned above, ERP is not effective in patients with religious obsessions and patients who do not have overt compulsions. After recognizing the inefficacy of the classical cognitive restructuring model in addressing religious OCD, it was decided to integrate this 4T model, as depicted in the table 2, in the 7th or 8th session. After introducing the classical cognitive model of OCD, it was begun to personalize the model with the patients' own obsessions and compulsions. It was taught the patients the critical importance of the person's own interpretations of their thoughts. So, it was begun to talk about how the interpretations can be changed and why they should. Due to the inadequacy of the classical cognitive explanation, this was the main point at which resistance in the patients were observed. At this point, 4T model was used to explain the process of obsessive symptoms by looking at their symptoms and offering new alternative interpretations.

In the intervention phase of the 4T model, it was first introduced Nursi as a Muslim scholar who has a cognitive explanation for religious OCD. It was then explained to them the four main concepts of 4T: tahayyul (imagination), tasawwur (conceptualization/detailed imagination), taakkul (reasoning/reflecting), and tasdiq (confirmation), emphasizing what he means by them and which of these concepts corresponds to which level of responsibility. Their feedback was taken to make sure that they understood the model. Then, firstly, one the of the obsessions, in question,

Table 2.
Intervention session content

Assessment
First sessions of psychotherapy
• Psycho-education about OCD • Explaining the cognitive model using the patient's symptoms *Here, the patients' symptoms were again addressed with the 4T model.*
Cognitive restructuring (regarding 1st and 2nd threats)
• Working with comments • Normalization of obsessive thoughts in obsessional patients *Here the psycho-education was deepened, using relevant text examples and normalization of symptoms on the 4T model.*
Behavioral techniques
• Behavioral experiments, release of neutralizations and suppression • Exposure to external avoidance

was selected and place it in the model scheme as one of tahayyul (imagination), tasawwur (conceptualization/detailed imagination), or taakkul (reasoning/reflecting) and fill in the other blanks with what was appropriate for clients' obsessions. The hierarchy of responsibility was emphasized and the equivalent stages of clients' obsession in 4T model based on Nursi's text was showed. According to Said Nursi (2008, p.285)

> "Just as imagining (tahayyul) unbelief (kufr) is not unbelief (kufr), while concepting (tasawwur) misguidance is not misguidance, so reflecting (tafakkur) on misguidance is not misguidance. All imagining and suspecting/assuming baselessly, concepting (tasawwur), and reflecting are considered different from reasonable confirmation (tasdiq). They are free to a certain extent; they do not listen to the faculty of will; they are not included in the duties of religion. But confirmation (tasdiq) is not like that; it depends on a balance."(see Figure 4).

Then, it was tried to come to terms regarding new interpretations of intrusive thoughts.

Course of Treatment

Initial Sessions and Classic CBT. In the initial sessions, the clients were informed about what cognition, emotion, and behavior are. The relationship between events, thoughts, emotions, and behaviors was illustrated through the clients' own experiences. In this way, the clients could acquire the ability to gain distance from his own internal processes by following them. To reinforce this skill, the clients were instructed to bring thought records to each new session. In behavioral experiments, through mind experiments such as the "pink elephant", it was taught that "trying to block a thought increases that thought" (In a brief behavioral experiment in which the clients were forbidden to think about a pink elephant for one minute, afterwards any thought, including the pink elephant, was allowed for one minute, it was shown that the prohibition increased the amount of the intrusive thought by increasing attention to the thought). Thoughts about Allah and the Prophet were also studied using this

pink elephant analogy. As a normalizing intervention, it was explained that their obsessions were related to what they really valued in life, with examples of religious people with similar obsessions.

The clients' religious obsessions were written down. In order to cognitively restructure their misinterpretations on the subject and to separate their own perfectionist expectations from the demands of religion, for example, she (one of the clients, case C) was asked to search for the answers to questions such as "Is the basmala (the religious sentence Muslims use at the beginning of all actions, except ones forbidden in Islam, and means 'in the name of Allah, the most gracious, the most merciful') obligatory?" from the fatwa line and to record the answers. "Is belief (iman) 100% certain?", "Can you have suspicious questions about belief issues even though you have belief (iman)?" , "What kind of thinking does not conform with belief (iman)?" "Is it possible for me to be 100% sure of something in life?" and to briefly exchange ideas with the people around them.

After the cognitive preparation was partially completed, an obsession-compulsion-anxiety graph was drawn before the commencement of ERP explaining the relationship between recovery and tolerance of anxiety. A distinction was made between doubt and curiosity. The problem list, including all the obsessions and compulsions the client wanted to get rid of, was evaluated and rewritten according to the Event-Thought-Comment-Emotion-Behavior scheme. Afterwards, the awareness of the vicious cycle formation process was reinforced in the client's mind.

4T Model Psycho-education. During the therapy session, clients expressed uncertainty about the cognitive therapy explanation of thought: "How do we differentiate between normal thoughts and obsessions?" If the importance of thought emphasized in cognitive psycho-education is correct, then advising to disregard thoughts defined as obsessions would be illogical for the clients. It was unclear how or by whom this decision was made, specifically regarding which thoughts were considered "normal" versus "obsessive". This left them confused and without a clear understanding. Another question they had pertained to the origin of their obsessive thoughts, which CBT did not provide a direct answer to, but rather acknowledged as a "natural human experience". The clients expressed dissatisfaction with how cognitive therapy explained their thoughts, as it did not fully align with their experience. "How can we distinguish a typical thought from an obsession?" If the critical role of cognition in psycho-education were authentic, then the instruction to disregard specific thoughts designated as obsessive would have seemed illogical. It was uncertain to them who determined which thoughts were "normal" or "obsessions", and the advice simply did not make sense to them. Another inquiry was about the origin of obsessive thoughts, which CBT did not provide a direct answer to, but acknowledged as a common human experience. The question posed was, "Why does

the index person experience these thoughts and not someone else?”

The 4T model introduces a hierarchical structure with four stages within the cognitive aspect of CBT. This enables the differentiation of intrusive thoughts and the thoughts that have the ability to incite emotions, actions, and character formation. All obsessions of the clients were expounded through this model. For instance, the presence of an unsavory and immoral image of Allah in the client’s mind was attributed to “imagination (tahayyul)” and considered to be beyond his control and accountability. A more detailed offensive or sexual depiction of Allah manifested as an “imagination (tahayyul)” and was not under his control or responsibility. Inquiries like “Is it appropriate to disrespect Allah?” and “How can the most merciful Allah allow a world like this?” were examples for “taakkul (reasoning/reflecting),” neutral considerations that aimed to find the appropriate answer within themselves. Hence, they could be a matter of choice, but did not entail a moral obligation. However, stating “Yes, I have chosen to disobey Allah” would constitute an objective statement, free from subjective evaluation of emotions such as sadness or fear.

The patients attentively and keenly absorbed the model and implemented it to address their symptoms. As a result, their resistance to ERP promptly decreased. Subsequently, it was gradually diminished the amount of time for ablution (washing the parts of the body before performing worship) and ghusl (washing whole body especially after specific cases such as sexual intercourse, seminal emission, mensturation etc., requiring ghusl and before performing worship), and instructed them to reintroduce the previously avoided worship practices due to OCD. Throughout this process, the severity of the patients’ symptoms gradually diminished. Naturally, the alleviation of severe symptoms experienced by the clients for the first time in years presented an opportunity for us to delve into the underlying aspects of the illness and decipher the message conveyed by the symptoms.

> “In matters of belief (iman), what occurs to one in the form of doubts are scruples. The unhappy man suffering from scruples sometimes confuses imagination (tahayyul) with reasoning/reflecting(taakkul). That is, he suspects/assumes baselessly (tewehhum) a doubt that has occurred to his imagination (tahayyul) to be a doubt that has entered his reason, and supposes that his beliefs (iman) have been damaged. Sometimes he suspects/assumes baselessly (tewehhum) a doubt he has supposed to have harmed his belief (iman). Sometimes he supposes a doubt he has concepted (tasawwur) to have been confirmed by his reason (tasdik-i akli). Sometimes he supposes reflecting (tafakkur) in a matter related to unbelief (kufr) to be unbelief (kufr). That is, he supposes to be contrary to belief (iman) his exercising his ability to reflect in (tafakkur) the form of understanding the causes of misguidance, and his ability to study and reason in impartial fashion. Then, taking fright at these suppositions, which result from the whisperings of Satan, he exclaims: “Alas! My heart is corrupted, and my beliefs spoiled.”

Since those states are mostly involuntary, and he cannot put them to rights through his faculty of will, he falls into despair. The cure for this wound is as follows:

> "Just as imagining (tahayyul) unbelief (kufr) is not unbelief (kufr), neither is suspecting/assuming baselessly (tewehhum) unbelief (kufr), unbelief (kufr). And just as concepting (tasawwur) misguidance is not misguidance, so too reflecting (tafakkur) on misguidance is not misguidance. For both imagining (tahayyul), and suspecting/assuming baselessly (tewehhum), and concepting (tasawwur), and reflecting (tafakkur), are different from confirmation with the reason (tasdik-i akli) and submission of the heart (iz'an-i kalbi), they are other than them; they are free to an extent; they do not listen to the faculty of will; they are not included among the obligations of religion. But confirmation (tasdiq) and submission (iz'an) are not like that; they are dependent on a balance. And just as imagining (tahayyul), suspecting/assuming baselessly (tewehhum), concepting (tasawwur) and reflecting (tafakkur) are not confirmation (tasdiq) or submission (iz'an), so they cannot be said to be doubt or hesitation." (Nursi, 2008, p.285)

Additionally, it is included the information that this hierarchy of responsibility is Nursi's view, and it is added Nursi's etiology about obsession:

> "Satan first casts a doubt into the heart. If the heart does not accept it, it turns from a doubt into abuse. It depicts before the imagination (tahayyul) some unclean memories and unmannerly, ugly states which resemble abuse, and causes the heart to declare: "Alas!" and fall into despair. The person suffering from scruples supposes that he has acted wrongfully before his Sustainer and feels a terrible agitation and anxiety. In order to be saved from it, he flees from the Divine presence and wants to plunge into heedlessness. The cure for this wound is this: O wretched man suffering from scruples! Do not be alarmed! For what comes to your mind is not abused, but something imaginary. And like to imagine (tahayyul) unbelief (kufr) is not unbelief (kufr), to imagine (tahayyul) abuse is not abuse either for according to logic, an imagining (tahayyul) is not a judgement, and abuse is a judgement. Moreover, those ugly words are not the words of your heart, because your heart is saddened and sorry at them. Rather they come from the inner faculty situated near the heart which is a means of Satanic whisperings. The harm of scruples is suspecting/assuming baselessly (tewehhum) the harm. That is, it is to suffer harm in the heart through suspecting/assuming baselessly (tewehhum) them to be harmful. For it is suspecting/assuming baselessly (tewehhum) to be reality an imagining (tahayyul) which is devoid of judgement. Also, it is to attribute to the heart Satan's works; to suppose his words to be from it. Such a person thinks it is harmful, so it becomes harmful. That is anyway what Satan wanted." (Nursi, 2008, pp.281-282)

All patients had curiosity about the origins of these intrusive thoughts. As it was mentioned above, the intrusive thoughts are originated from "Lumme-i Satan[10]" which might be as a remembrance of "detachment of mind" as in third wave therapies and metacognitive therapy.

Also, in the following part of the same text, he mentions that intrusive thoughts may stem from the unique working principles of the mind (such as the interaction between the bodily needs and imagination, the principle of opposition in associations and deep associative bonds between things whose secrets are difficult to know) (Nursi, 2008).

10 The place, close to the qalb (heart), where the satan whispers.

> ‘’It is this: there are certain hidden connections between things. There are even the threads of connections between things you least expected. They are either there in fact, or your imagination made them according to the art with which it was preoccupied, and tied them together. It is due to this mystery of connections that sometimes seeing a sacred thing calls to mind a dirty thing. As stated in the science of rhetoric, “Although opposition is the cause of distance in the outer world, it is the cause of proximity in the imagination.” That is, an imaginary connection is the means of bringing together the images of two opposites. The recollection which arises from this connection is called the association of ideas.’’ (Nursi, 2008, pp.282-283).

In addition, Nursi mentioned three basic powers (quwwah) in his another texts ‘’Signs of Miraculousness(Isharat al-I’jaz)’’,in which he explained the importance of using one’s potentials in balance.

> “…When Allah (May He be exalted and glorified!) housed spirit (ruh) in man’s body (jism/badan), which is changing, needy, and exposed to dangers, He deposited three powers in it to ensure its continued existence. The First: the power of desire (quwwah shahwiyyah) to attract benefits. The Second: the power of anger (quwwah ghadabiyyah) to repulse harmful and destructive things. The Third: the power of intellect (quwwah aqliyyah) to distinguish between benefit and harm. However, since His wisdom necessitated that humanity should achieve perfection through the mystery of competition, Allah placed no innate limitation on these powers, as He did on those of other living beings. He did however limit them through the Shari’a (Islamic Law), for it prohibits excess (ifrât) and deficiency (tafrît) and enjoins the middle way (wasat).” (Nursi, 2012, p.29)[11]

According to the Nursi, there are three basic powers in human beings: power of desire (quwwah shahwiyyah), which refers to all kinds of desires, the power of anger (quwwah ghadabiyyah), which refers to all kinds of self-preservation, and the power of intellect (quwwah aqliyyah), which refers to all kinds of reasoning activities. The first two of these, shahwiyyah (desire) and (anger), represent the instinctual-animal side of human beings and are the basic energy sources of our existence. They are in a constant state of functioning as long as people live, and since they have no moral-conscientious purpose, and their only purpose is the continuation of the species, they have unlimited desires (Nursi, 2012, pp.29-30).Considering the relationship between these powers (the power of desire [quwwah shahwiyyah] and the power of anger [quwwah ghadabiyyah]) and intrusive thoughts, in the context of ilm an nafs (knowledge of self) texts and the writings of Nursi, an explanation is given as follows: They (the power of desire [quwwah shahwiyyah] and the power of anger [quwwah ghadabiyyah]) send these unlimited impulses to the mind through imagination (tahayyul) and conceptualization/detailed imagination (tasawwur).

11 In the English translation of the texts of Nursi, concepts related to mental health have been negotiated by professionals and replaced with concepts that are considered more appropriate.

Some imaginations and thoughts coming to the mind from time to time result from the interaction of our two basic powers (shahwiyyah and ghadabiyyah) with the mind, operating beyond our control. The intellect evaluates this data by reasoning and transmits what it deems appropriate to perform to the heart, which is the main decision center. Here it is either accepted and turn into action or rejected and does not turn into action (Toprak, 2018).[12]

Thus, the questions on the origin of the intrusive thoughts, that the patients are so curious about, are explained in three different possibilities, depending on the symptoms and the context, sometimes as a result of lumme-i Satan, sometimes as a result of association principles and sometimes as a result of the natural workings of the powers representing the biological/animal aspect of human beings.

The therapy initially used CBT and it was subsequently integrated 4T model to overcome the shortcomings of CBT. The method successfully resolved the problems associated with cognitive structures that had negatively affected their life balance, and helped reorganize their cognitive processes using new insights and experiences. During this process, individuals struggling to overcome symptoms of OCD found that the 4T cognitive model, which is rooted in the hierarchy of responsibility, helped them revise their theoretical knowledge that didn't align with their experience. Additionally, the hierarchy's adaptable structure facilitated the proper reevaluation of their symptoms. A comprehensive account of the origins of intrusive thoughts and a systematic approach to addressing cases pertaining to self-awareness and control is furnished by using Nursi's texts as supplementary information. Consequently, it is highly appropriate for prospective deployment. With the integration of 4T and additional information in the texts with the fundamental concepts and interventions of CBT, patients displayed an openness to new experiences, as well as learning and progress.

Results

This study presents content from a total of 3 participants who completed the psycho-educational intervention. This content includes brief information about the case participant patients and post-intervention assessment results. The participants' levels of obsessive-compulsive symptoms are shown in Table 1.

12 In the process, the subject of powers (quwwah) is developed into a psycho-educational model explaining basic impulses, mind and human maturation by Toprak (2018) under the name of 3K Model based on the first letters of the powers (kuvve) in their Turkish spelling.

Table 1.
Y-BOCS and PI scores of the patients before and after "4T Model" psycho-education.

		Y-BOCS Score					PI Score					BDI Score			BAI Score		
Patient	**Age**	**Assesment Session**	**10.Session**	**20.Session**	**30.Session**	**3 Years Follow Up**	**Assesment Session**	**10.Session**	**20.Session**	**30.Session**	**3 Years Follow Up**	**Assesment Session**	**Final session**	**3 Years Follow Up**	**Assesment Session**	**Final session**	**3 Years Follow Up**
A	38/M	18	14	16	13	19	32	22	19	16	31	11	4	7	15	5	4
B	36/M	36	16	25	37		80	51	65	64		44	37		17	18	
C	35/F	29	20	16	22	6	79	70	50	42	43	28	25	9	31	8	11

Note. Y-BOCS = Yale Brown Obsessive Compulsive Disorder; PI = Padua Inventory; BDI = Beck Depression Inventory; BAI: Beck Anxiety Inventory

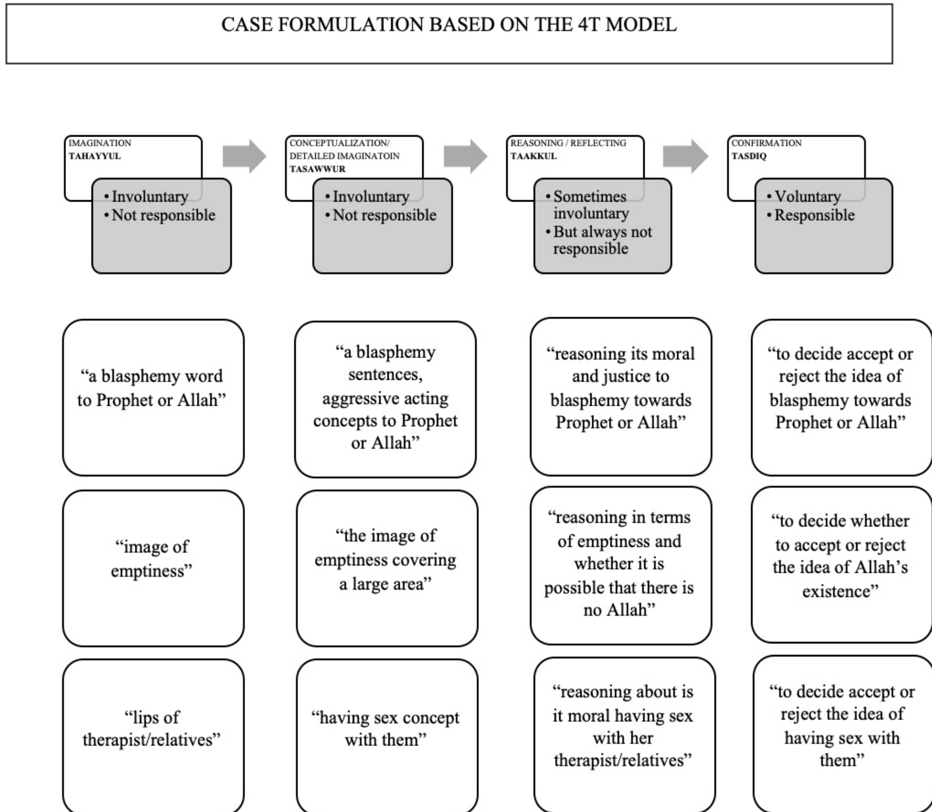
Case Examples

Case A. A 38-year-old single male presented to our outpatient clinic complaining of obsessions, compulsions, and obsessional slowing. He stopped using his psychiatric medications three months before his presentation and was reluctant to take any psychopharmacological agent. The obsessions were as follows: the emptiness of an image, which means the non-existence of God, fear of being Godless because of sacrilege and blasphemy, need for exactness in acts related to religion or non-religious behaviors, fear of uncertainty in routine acts, and aggressive obsessions. The compulsions were repeating internal speeches about being a self-believer in God or convincing himself of the existence of God, repeating behaviors while praying or doing routine acts, control behaviors, and avoiding behaviors for aggressive obsessions. He had been treated with various anti-obsessive treatments, including clomipramine, fluoxetine, sertraline, fluvoxamine for 24 years. His older sister is being followed in our psychosis clinics with a diagnosis of schizophrenia. His mental examination did not reveal any symptoms other than obsessions and compulsions. The initial scores of Y-BOCS and PI were 18 and 32 points, respectively. The scores of Y-BOCS and PI were 13 and 16 points, respectively at the 30th session which took place on the 8th month of therapy. The baseline and final BDI scores were 11 and 4 and the corresponding BAI scores were 15 and 5. The patient, becoming free of obsessions and overt compulsions after introducing the 4T model, stated the following: *"4T was rational, I realized they were images (tahayyul) and not related to my belief (iman) or will.* The results of the three-year follow-up tests for Y-BOCS, PI, BDI, and BAI were 19, 31, 7, and 4, respectively. Throughout the follow-up sessions, the patient mentioned that *"I learned that as long as it is an imagination (tahayyul) and not a confirmation (tasdiq), it does not harm belief (iman)."* Rather than normalizing intrusive thoughts (Matthes, 2015) or giving the thought no meaning (Twohig, 2015), it was worked through this intrusive thought by sharing the 4T model of intrusive thought occurrence.

Case B. A 36-year-old married man, a civil servant, presented to our outpatient clinic complaining of obsessions and compulsions. He was receiving aripiprazole 15mg/day, clomipramine 225 mg/day, and risperidone 1mg/day, but was not compliant with the treatment regimen. His obsessions were as follows: intrusive thoughts about the non-existence of God and the afterlife, concern about being godless because of sacrilege and blasphemy or approving non-Islamic facts/objects, need for exactness in acts related to religion, concern about uncertainty in routine acts. The compulsions included the need to ask or tell to receive reassurance about being a believer to God, repetition of mental imaginative compulsions such as ejaculating behaviors to non-Islamic facts/objects and bowing behaviors to Islamic facts/objects, and control behaviors. He has been treated for 24 years with various anti-obsessive treatments, including clomipramine, fluoxetine, sertraline, fluvoxamine, pimozide, thioridazine, benzodiazepine, and 7 sessions of electroconvulsive therapy (ECT). In addition to depressive symptoms, obsessions and compulsions were the main symptoms in his psychiatric examination. The initial Y-BOCS and PI scores were 36 and 80 points, respectively. The final Y-BOCS and PI scores were 37 and 64 points, respectively, at the 40th session which took place on the 11th month of therapy. The initial and final BDI scores were 44 and 37 points, and the corresponding BAI scores were 17and 18 points. Follow-up measurements could not be conducted because the patient was lost to follow up. In addition, after explaining the 4T model to the patient, he emphasized that after learning the hierarchy of existence of intrusive thoughts, he acknowledged that these thoughts were free of his will/not under his control, for which he should not feel responsible. The patient declared *"When I remember 4T, I find out that the things that go through my mind are just imagination (tahayyul), they are not real"*. It is well known that depression is common in patients with OCS. Although the patient B's anti-depressive treatment was not modified, his depressive symptoms improved along with his OCD symptoms. The follow-up scores of the patient B cannot be obtained due to lack of contact.

Case C. A 35-year-old married female applied to our outpatient clinic with depressive symptoms including crying, avolition, and anhedonia, and obsessions without compulsions. The obsessions were as follows: intrusive thoughts of inexistence of God and afterlife, aggressive thoughts about herself or others, cheating or being cheated, concern about being Godless because of sacrilege and blasphemy or approving non-Islamic facts/objects, incestuous sexual obsessions, worries about jinns, fear of dying, and avoidance behaviors. She was receiving olanzapine 20mg/day and clomipramine 150 mg/day. She had been treated with paroxetine 20 mg/day for one year 11 years before her presentation to our clinic. Her anxiety and depressive symptoms were considered to be secondary to the obsessions. The initial scores of Y-BOCS and PI were 29 and 79 points, respectively, while the scores of Y-BOCS and PI were 22 and 42 points, respectively, at the 30th session which took

Figure 4.
Case symptom formulation based on the 4T model.



place on the 10th month of therapy. The initial and last BDI scores were 28 and 25 points, and the corresponding BAI scores were 31 and 8 points. As evidence that the patient’s thought-action fusion had been overcome/progress had been made. Patient C emphasized that it is the behavioral outcome that is most important, not the intrusive thoughts/images. *“I was impressed with the 4T model. I used to try to control my feelings and thoughts before learning this. I understood that what matters is the behavior. What I will be responsible for is what I execute.”* The results of the three-year follow-up tests for Y-BOCS, PI, BDI, and BAI were 6, 43, 9, and 11, respectively, and the patient remembered the acquisitions related to 4T without being asked specifically about 4T and stated the following: *“It’s good to know that thoughts before confirmation (tasdiq) are not sinful nor under my responsibility.”, “It made me think freely about my thoughts.”, “I know that there’s no harm to my belief (iman) unless I confirm (tasdiq) these thoughts.”*

Discussion

The aim of this study under the umbrella of religious knowledge integrative intervention is to evaluate the effect of the 4T model, which tries to provide a persuasive explanation of the source of obsessions and to teach the cognitive distinction between obsessions, values, and beliefs. In this regard, quantitative results of this study showed that OCD, depression, and anxiety symptoms decreased in all patients immediately after the 4T model intervention. Although there were partial fluctuations during the process, this decrease was observed in the follow-up, except for patient B. Furthermore, when the feedback received from the patients is evaluated, it is seen that they internalized the main idea that the 4T model wanted to convey, thus they distinguished between their obsessions and their values and beliefs, and in this context, they learned to make a distinction (defusion) in the fusion between cognitive processes and responsibility for action which constitutes the basis of TAF.

As the effect of CBT on OCD is analyzed, not only in the meta-analysis but also in the individual studies, CBT is found to be effective to decrease the symptoms of OCD (Abramowitz, 1997; Abramowitz, 2006; Simpson et al., 2006; Rosa-Alcazar et al., 2008; Olatunji et al., 2013; Ost et al., 2015). In long term consequences one study found that in 2-years follow-up, patients pretended the improvements on OCD (which was the reduction in symptoms) after getting CBT (Whittal et al., 2008), another study found the effects of CBT on OCD pretended on a 5-year follow-up (Oppen et al., 2005), and similar results were also shown in internet-based CBT with a 2 year follow-up (Andersson et al., 2014). The positive effect of CBT on obsessions and compulsions does not only remain at the individual level, but also in group therapies (Kearns et al., 2010; Safak et al., 2014), which is also shown in follow-up sessions (Haland et al., 2010). In the case of religious OCD, Abramowitz (2001) found a positive effect of ERP and/or cognitive intervention on religious OCD. However, some researchers asserted that having religious symptoms in OCD estimate poor treatment results (Mataix-Cols et al., 2002; Rufer et al., 2005; Ferrao et al., 2006; Alonso et al, 2011), and patients with religious OCD may be resistant to some CBT intervention approaches (such as ERP) and as a result, the effectiveness of the therapy is affected (Mataix-Cols, 2002; Ferrao, 2006). Thus, in religious OCD, the unique challenges of the treatment process arise (Abramowitz, 2001; Siev & Huppert, 2017). Some of these challenges include how to differentiate between religious obsessions and compulsions and normal religious thoughts and behaviors, as well as determining who will do this, under what authority, and with what standards, and another is determining when religious leaders will participate in the therapeutic process (Huppert & Siev, 2010). These challenges can only be overcome by adjusting the current therapies to the unique requirements and sensitivities (cultural/religious sensitivities) of patients with religious OCD (Huppert et al., 2007; Witzig, 2017). In

this regard, some studies having cultural/religious sensitivity found improvement in patients after conducting ERP and/or cognitive interventions (Garcia, 2008; Huppert & Siev, 2010; Peris & Rozenman, 2016; Siev & Huppert, 2017).

When religious knowledge integrative interventions related to religious OCD in the literature are examined, it is seen that many studies have investigated how combining religious knowledge with CBT affects religious obsessive-compulsive disorder. They discovered that this merged approach effectively reduced the intensity of obsessive contents and compulsive behaviors measured by Y-BOCS, thereby lessening the severity of OCD symptoms (Akuchekian et al., 2015). Similar research, applying pre and post-test of Y-BOCS, reinforced these outcomes by demonstrating a reduction in symptom severity (Akuchekian et al., 2011). Another study noted a significant decline in religious OCD symptoms, by using Y-BOCS, following the intervention, even the scores persisted during the follow-ups at 3 and.6 months. (Aouchekian et al., 2017). Furthermore, a randomized controlled clinical trial study, using Y-BOCS, highlighted that the positive impact of incorporating religious content into the therapy enhance the treatment responses for religious OCD patients (Omranifard et al., 2011). According to Alimadadi et al. (2020), following spiritual group psychotherapy for adults with OCD, there was a decrease observed in OCD symptoms, including thought-action fusion, obsessive beliefs, and religious obsessions. In line with the results of the other studies, therapies integrating Islamic values and using cognitive and/or behavioral (ERP) techniques have also showed a relief in the patients' symptoms (Singh and Khan; 1997 [as cited in Md Rosli et al., 2019]; Badri, 2017; Md Rosli et al., 2017). A study in the literature, applying religious strategies into the therapy, used both Y-BOCS and Penn Inventory of Scrupulosity (PIOS) and found that patients' scores of Y-BOCS and PIOS decreased after interventions (Arip et al., 2018). When the studies directly integrating the 4T model into the therapy are examined, it is seen that positive results are obtained similar to the studies aforementioned. For example, an OCD patient having received CBT but has still problems is given a 5-session individual psycho-education intervention using only the 4T model and the study found that the patient responded well to the 4T model intervention and the decline of the severity of the symptoms is pretended during follow-ups up to 3 months (Karakan & Toprak, 2023). The positive results of the 4T model on OCD have been shown not only in individual psychotherapy intervention but also in group interventions. To illustrate, Toprak (2022) conducted a study comparing two groups consisted of religious OCD patients: One group receives only group CBT, while the other group receives 4T integrated group CBT. The results showed that both group interventions are significantly effective in treating OCD, and this effect persists during the one-month follow-up period. There is no significant difference found between the two group treatments, with the exception that 4T produces better insight with a moderate effect. Over the course

of 4T intervention, it is discovered that the 4T model is more effective than CBT in obsessive and compulsive symptoms as well as obsessive beliefs. In this study, the fact that the participants' Y-BOCS and PI scores decreased after the application of the 4T model shows that the results of this study is consistent with the both general and specially 4T literature. Overall, these findings highlight the potential benefits of CBT combined with religious knowledge and CBT integrated with original models developed from religious texts in reducing religious OCD symptoms.

Even as a secondary outcome, CBT is also found to be effective in reducing the depression symptoms in OCD (Hofman & Smits, 2008), and this outcome is reinforced in the results revealed in a meta-analysis conducted by Olatunji et al. (2013). Some studies found that the changes in the OCD symptoms, after getting ERP and/or CBT, accompanied with the changes in the depressive symptoms (Anholt et al., 2011; Zandberg et al., 2015). In some studies, in which pharmacological treatment was applied in addition to CBT for OCD, not only Subjective Y-BOCS scores but also BDI and BAI scores decreased (Koprivova et al., 2009; Vyskocilova, Prasko & Sipek, 2016). These outcomes, both the decrease in depression scores and the reduction in anxiety scores, are repeated in GCBT sessions as well (Haland et al., 2010; Safak et al, 2014). Moreover, the reduction in the scores of BDI and/or BAI are also found in the studies applying ERP and/or cognitive interventions on patients with religious OCD (Abramowitz, 2001; Garcia, 2008; Siev & Huppert, 2017)

Examining the secondary outcomes of religious knowledge integrative interventions, as reductions in anxiety and depression scores were found in non-religiously orientated treatment protocols, trend of reduction in the scores of anxiety and depression were also found in religious knowledge integrative interventions. For example, a case study using 4T, the patient's anxiety and depression scores decreased from mid-level to sub-clinical level (Karakan & Toprak, 2023). In a case study, Islamic integrated ERP (IERP) was applied for a patient, having contamination OCD, and found that in addition to decrease in Y-BOCS' scores, reduction in the scores of BAI and BDI were observed (Arip et al., 2018). Furthermore, similar results are found not only in individual therapies but also in group (CBT) therapies (Toprak, 2022). When the BDI and BAI scores of the patients in this study are analysed, it is seen that the decrease in these scale scores (after applying 4T model intervention) is parallel to the results in the literature.

In addition to the substantial reduction of the scores especially after the application of 4T, statement of case A, ''*4T was rational, I realized they were images (tahayyul) and not related to my belief (iman) or will, and I learnt that as long as it is an imagination (tahayyul) and not a confirmation (tasdiq), it does not harm belief (iman)",* showed the different influence of the model in terms of over-emphasis on thought , though-action fusion and over-responsibility on the control of thinking.

Similarly, both the decrease in scores and the Patient C's statement, *"I was impressed with the 4T model. I used to try to control my feelings and thoughts before learning this. I understood that what matters is the behavior. What I will be responsible for is what I execute."*, indicated that the model has a critical impact on the understanding of thought-action fusion and the realization of cognitive defusion. At the end of the 3-year-follow-up, both the scales got better and the Patient C's statement, *"(Without being directly questioned about 4T) It's good to know that thoughts before confirmation (tasdiq) are not sinful nor under my responsibility.", "It made me think freely about my thoughts.", "I know that there's no harm to my belief (iman) unless I confirm (tasdiq) these thoughts."* are important to show in terms of showing that learning is consolidated and maintained. Likewise with positive feedback from other cases, the statement of Patient B *"When I remember 4T, I find out that the things that go through my mind are just imagination (tahayyul), they are not real",* showed that he learnt a new cognitive perspective in the areas of excessive anxiety related to thought-action fusion and thought control, which he had not learnt in previous treatments. However, when the scale results are analyzed, it is observed that there is a significant decrease in the weeks after the 4T intervention, but she could not maintain it afterwards. The patient encountered serious stressors such as divorce in the process, which affected his general condition. It can also be considered that the patient, who had experienced treatment resistance many times before, was also religiously affected by the cognitive structuring of 4T, but could not maintain his gains because there was no full internalization in the process.

Considering that the patients are resistant to treatment and do not respond to many pharmacological and psychotherapy interventions, it can be thought that in this treatment, they internalized cognitive psycho-education with the difference made by 4T model and this is reflected in their behavior. Lastly, in accordance with the literature, it was observed in this study that symptoms decreased with 4T model intervention. Moreover, as the feedback of the patients are taken into account, it can be assumed that they all experienced a cognitive restructuring through the 4T model in the areas of overemphasis on thought/thought-action fusion and excessive anxiety about the control of thought. The fact that they especially expressed the 4T model and in the meantime, they emphasized cognitive processes and expressed the difference between taking action and mental processes supported the effectiveness of the model.

Conclusion

In conclusion, the 4T model, which is both a religious sensitive approach and a unique intervention in the treatment of religious OCD, which has unique challenges in many aspects, has increased the treatment compliance and success of resistant patients by applying it together with the extra information from Nursi's texts

complementary information. Here, especially the 4T model, which offers a unique hierarchical approach to cognitive processes, seems to have a significant effect on patients in terms of separating beliefs and values from other cognitive processes, including obsessions.

Limitation & Recommendation

In addition, considering the emphasis on "intolerance of uncertainty" and "fusion of moral thought and action" on religious OCD symptoms (Abramowitz, 2014), it can be stated as the limitations of the study that no measurement was made with scales such as Obsessive Beliefs Questionnaire and Thought-Action Fusion Scale before and after the 4T model psycho-education intervention. Information from Nursi's texts like 3K model have been also used to enhance the impact of the 4T model. Since these models also offer new explanations, more subtle methods should be used to distinguish their effects from the effects of the 4T model. Studies with mixed designs, especially RCTs, for both 4T and other models used will increase our knowledge about the effectiveness of the models.

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References

Abramowitz, J. S. (1997). Effectiveness of psychological and pharmacological treatments for obsessive-compulsive disorder: A quantitative Review. *Journal of Consulting and Clinical Psychology, 65*(1), 44–52. https://doi.org/10.1037/0022006X.65.1.44

Abramowitz, J. S. (2001). Treatment of scrupulous obsessions and compulsions using exposure and response prevention: A case report. *Cognitive and Behavioral Practice, 8*(1), 79–85. https://doi.org/10.1016/S1077-7229(01)80046-8

Abramowitz, J. S. (2006). The psychological treatment of obsessive—compulsive disorder. *The Canadian Journal of Psychiatry*, *51*(7), 407-416. https://doi.org/10.1177/070674370605100702

Abramowitz, J. S., & Hellberg, S. N. (2020). Scrupulosity. In *Advanced casebook of obsessive-compulsive and related disorders* (pp. 71-87). Academic Press.

Abramowitz, J. S., & Jacoby, R. J. (2014). Scrupulosity: A cognitive-behavioral analysis and implications for treatment. *Journal of Obsessive-Compulsive and Related Disorders, 3*(2), 140-149. https://doi.org/10.1016/j.jocrd.2013.12.007

Abramowitz, J. S., Deacon, B. J., Woods, C. M., & Tolin, D. F. (2004). Association between Protestant religiosity and obsessive-compulsive symptoms and cognitions. *Depression and Anxiety*, *20*, 70-76. https://psycnet.apa.org/doi/10.1002/da.20021

Abramowitz, J. S., Franklin, M. E., Schwartz, S. A., & Furr, J. M. (2003). Symptom presentation and outcome of cognitive-behavioral therapy for obsessive-compulsive disorder. *Journal of Consulting and Clinical Psychology*, *71*(6), 1049–1057. https://doi.org/10.1037/0022-006X.71.6.1049

Abramowitz, J. S., Huppert, J. D., Cohen, A. B., Tolin, D. F., & Cahill, S. P. (2002). Religious obsessions and compulsions in a non-clinical sample: The Penn inventory of scrupulosity (PIOS). *Behaviour Research and Therapy*, *40*(7), 825-838. https://doi:10.1016/s0005-7967(01)00070-5

Abramowitz, J. S., Taylor, S., & McKay, D. (2005). Potentials and limitations of cognitive treatments for obsessive-compulsive disorder. *Cognitive Behaviour Therapy*, *34*(3), 140–147. https://doi.org/10.1080/16506070510041202

Abramowitz, J. S., Whiteside, S., Kalsy, S. A., & Tolin, D. F. (2003). Thought control strategies in obsessive-compulsive disorder: A replication and extension. *Behaviour Research and Therapy*, *41*(5), 529–540. https://doi.org/10.1016/s00057967(02)00026-8

Akuchekian, S. H., Almasi, A., Meracy, M. R., & Jamshidian, Z. (2011). Effect of religious cognitive behavior therapy on religious content obsessive compulsive disorder. *Procedia-Social and Behavioral Sciences*, *30*, 1647-1651. https://doi.org/10.1016/j.sbspro.2011.10.319

Akuchekian, S., Nabi, L. N., Emranifard, V., Najafi, M., & Almasi, A. (2015). The affect of religious cognitive-behavior therapy on quality of life obsessive–compulsive disorder. *Advanced Biomedical Research, 3*(1), 71-74. https://doi.org/10.19070/2332-3000-1500013

Alimadadi, S., Najafi, M., Mohammadi, M., Rahimian Bogar, I., & Salmanian, M. (2020). Assessment the effect of spiritual psychotherapy protocol in groups on symptoms, cognitive factors and religious obsession in adult patients with obsessive compulsive disorder. *Islamic Life Journal*, *4*(3), 18-25.

Alonso, P., Menchon, J. M., Pifarre, J., Mataix-Cols, D., Torres, L., Salgado, P., & Vallejo, J. (2001). Long-term follow-up and predictors of clinical outcome in obsessive-compulsive patients treated with serotonin reuptake inhibitors and behavioral therapy. *Journal of Clinical Psychiatry*, *62*(7), 535-544. https://doi.org/10.4088/jcp.v62n07a06

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, (DSM-5).* APA.

American Psychological Association. (n.d.). Psyche. In *APA dictionary of psychology*. APA.

Amir, N., Freshman, M., Ramsey, B., Neary, E., & Brigidi, B. (2001). Thought-action fusion in individuals with OCD symptoms. *Behaviour Research and Therapy*, *39*(7), 765–776.

Andersson, E., Steneby, S., Karlsson, K., Ljótsson, B., Hedman, E., Enander, J., Kaldo, V., Andersson, G., Lindefors, N., & Rück, C. (2014). Long-term efficacy of internet-based cognitive behavior therapy for obsessive-compulsive disorder with or without booster: A randomized controlled trial. *Psychological Medicine*, *44*(13), 2877–2887. https://doi.org/10.1017/S0033291714000543

Anholt, G. E., Aderka, I. M., van Balkom, A. J., Smit, J. H., Hermesh, H., de Haan, E., & van Oppen, P. (2011). The impact of depression on the treatment of obsessive–compulsive disorder: Results from a 5-year follow-up. *Journal of Affective Disorders*, *135*(1–3), 201–207. https://doi.org/10.1016/j.jad.2011.07.018

Aouchekian, S., Karimi, R., Najafi, M., Shafiee, K., Maracy, M., & Almasi, A. (2017). Effect of religious cognitive behavioral therapy on religious obsessive compulsive disorder (3 and 6 months follow-up). *Advanced Biomedical Research*, *6*, 1-5. https://doi.org/10.4103/abr.abr_115_16

Arip, A., Sharip, S., & Nabil, M. R. (2018). Islamic integrated exposure response therapy for mental pollution subtype of contamination obsessive-compulsive disorder: A case report and literature review. *Mental Health, Religion & Culture, 21*, 210–218. https://doi.org/10.1080/13674676.2018.1436047

Arshad, M. (2019). The history of psychology in Islam. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, *3*, 187-193.

Badri, M. (2017). Müslüman *psikologların çıkmazı [The dilemma of muslim psychologist],* Trans. İ. N. Kaya. Mahya.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, *56*(6), 893–897. https://doi.org/10.1037/0022-006X.56.6.893

Beck, A. T., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). Beck Depression Inventory (BDI). *Arch Gen Psychiatry*, *4*(6), 561-571. https://doi.org/10.1001/archpsyc.1961.01710120031004

Belhi (2012). *Beden ve ruh sağlığı [Sustenance for the body and soul],* Trans. M. Uysal. Endülüs.

Besiroglu, L., Agargun, M.Y., Boysan, M., Eryonucu, B., Gulec, M., & Selvi, Y. (2005). Obsesif-kompulsif belirtilerin değerlendirilmesi: Padua Envanteri'nin Türk toplumunda geçerlik ve güvenilirliği [The assessment of obsessive-compulsive symptoms: the reliability and validity of the padua ınventory in a turkish population]. *Türk Psikiyatri Dergisi*, *16*(3), 179-189.

Besiroglu, L., Karaca, S., & Keskin, I. (2014). Scrupulosity and obsessive-compulsive disorder: The cognitive perspective in Islamic sources. *Journal of Religion and Health*, *53*(1), 3–12. https://doi.org/10.1007/s10943-012-9588-7

Beydavi (2011). *Envarut tenzil ve esraruttevil [The lights of revelation and the secrets of interpretation]*, Trans. A. Öztürk. Kahraman.

Bouchard, C., Rhéaume, J., & Ladouceur, R. (1999). Responsibility and perfectionism in OCD: An experimental study. *Behaviour Research and Therapy*, *37*(3), 239–248.

Çiftçi, Ş., & Kuru, T. (2013). Thought action fusion in obsessive compulsive disorder. *Journal of Cognitive Behavioral Psychotherapy and Research*, *2*, 138-146.

Clark, D. A. (2005). Focus on "cognition" in cognitive behavior therapy for OCD: Is it really necessary? *Cognitive Behaviour Therapy*, *34*(3), 131–139.

Clark, D. A. (1999). Cognitive behavioral treatment of obsessive-compulsive disorders: A commentary. *Cognitive and Behavioral Practice*, 6, 408-415. https://doi.org/10.1016/S1077-7229(99)80059-5

Clark, D. A. (2019). *Cognitive-behavioral therapy for OCD and its subtypes*. Guilford.

Collins, L. M., & Coles, M. E. (2018). A preliminary investigation of pathways to inflated responsibility beliefs in children with obsessive compulsive disorder. *Behavioral and Cognitive Psychotherapy*, *46*(3), 374–379. https://doi.org/10.1017/S1352465817000844

Duarte, D. (2021). Cognitive behavioral therapy in obsessive-compulsive disorder: A review. *European Psychiatry*, *64*(1), 418-S418. https://doi.org/10.1192/j.eurpsy.2021.1117

Er-Razi (2019). *Et-tıbbu'r-rûhânî [Spiritual medicine],* Trans. H. Karaman. İz.

Ferrão, Y. A., Shavitt, R. G., Bedin, N. R., de Mathis, M. E., Carlos Lopes, A., Fontenelle, L. F., Torres, A. R., & Miguel, E. C. (2006). Clinical features associated to refractory obsessive-compulsive disorder. *Journal of Affective Disorders*, *94*(1-3), 199–209. https://doi.org/10.1016/j.jad.2006.04.019

Fisher, P. L. (2009). Obsessive compulsive disorder: A comparison of CBT and the metacognitive approach. *International Journal of Cognitive Therapy, 2*(2), 107–122.

Garcia, H. A. (2008). Targeting Catholic rituals as symptoms of obsessive-compulsive disorder: A cognitive-behavioral and psychodynamic, assimilative integrationist approach. *Pragmatic Case Studies in Psychotherapy*, *4*, 1-38. https://doi.org/10.14713/pcsp.v4i2.931

Gazali (1998). İhya'u *ulum'id-din [The revival of the religious sciences],* Trans. S. Gülle. Huzur.

Giasuddin, N. A., & Hossain, M. J. (2020). Understanding obsessive compulsive disorder and management options. *Faridpur Medical College Journal, 15*(1), 38- 42.

Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., Heninger, G. R., & Charney, D. S. (1989). The Yale-Brown Obsessive Compulsive Scale. I. Development, use, and reliability. *Archives of General Psychiatry*, *46*(11), 1006–1011.

Goz, I. (Ed.). (2021). Psikolojide araştırma yöntemleri *[Research Methods in Psychology]*. Nobel.

Håland, Å. T., Vogel, P. A., Lie, B., Launes, G., Pripp, A. H., & Himle, J. A. (2010). Behavioural group therapy for obsessive–compulsive disorder in Norway. An open community-based trial. *Behaviour Research and Therapy*, *48*(6), 547-554. https://doi.org/10.1016/j. brat.2010.03.005

Healy, H. A., Barnes-Holmes, Y., Barnes-Holmes, D., Keogh, C., Luciano, C., & Wilson, K. (2008). An experimental test of a cognitive defusion exercise: Coping with negative and positive self-statements. *The Psychological Record*, *58*, 623–640. https://doi.org/10.1007/BF03395641

Hisli, N. (1989). Validity and reliability of Beck Depression Inventory for university students. *Journal of Psychology, 7*(23), 3-13.

Hofmann, S. G., & Smits, J. A. (2008). Cognitive-behavioral therapy for adult anxiety disorders: A meta-analysis of randomized placebo-controlled trials. *Journal of Clinical Psychiatry*, *69*(4), 621. https://doi.org/10.4088/jcp.v69n0415

Huppert, J. D., & Siev, J. (2010). Treating scrupulosity in religious individuals using cognitive-behavioral therapy. *Cognitive and Behavioral Practice*, *17*(4), 382–392. https://doi.org/10.1016/j.cbpra.2009.07.003

Huppert, J. D., Siev, J., & Kushner, E. S. (2007). When religion and obsessive-compulsive disorder collide: Treating scrupulosity in ultra-orthodox Jews. *Journal of Clinical Psychology, 63,* 925-941. https://doi.org/10.1002/jclp.20404

Ibn-i Hazm (2012). *Ahlak ve davranış tarzları [Morals and behaviours]*, Trans. M. Çağrıcı. Türkiye Diyanet Vakfı.

Isgandarova, N. (2019). Muraqaba as a mindfulness-based therapy in Islamic psychotherapy. *Journal of Religion and Health*, *58*(4), 1146-1160. https://doi.org/10.1007/s10943-018-0695-y

Isik H. R., & Toprak, T.B. (2023, October 4-7). *Am I religiously responsible about my sexual intrusive thoughts? The use of the 4t model to distinguish cognition hierarchy in the context of religious responsibility after sexual abuse: A case report* [Conference presentation]. European Association for Cognitive Behavioral Psychotherapies (EABCT), Antalya, Turkey.

Karakan, B., & Toprak, T. B. (2023, October 4-7) *Using religiously extended psycho-educational 4t model for psychotherapy of scrupulosity: A case report* [Conference presentation] European Association for Cognitive Behavioral Psychotherapies (EABCT), Antalya, Turkey.

Kearns, C., Tone, Y., Rush, G., & Lucey, J. V. (2010). Effectiveness of group-based cognitive–behavioural therapy in patients with obsessive–compulsive disorder. *The Psychiatrist*, *34*(1), 6-9 https://doi.org/10.1192/pb.bp.106.011510

Kocoglu, F., & Bahtiyar, B. (2021). Yale-Brown Obsession Compulsion Scale-Turkish self report form: A study of reliability and validity. *Journal of Clinical Psychology, 5*(3), 229-243.

Koran, L. M., Hanna, G. L., Hollander, E., Nestadt, G., Simpson, H. B., & American Psychiatric Association (2007). Practice guideline for the treatment of patients with obsessive-compulsive disorder. *The American Journal of Psychiatry*, *164*(7), 5–53.

Mantz, S. C., & Abbott, M. J. (2017). Obsessive-compulsive disorder in paediatric and adult samples: Nature, treatment and cognitive processes. A review of the theoretical and empirical literature. *Behaviour Change*, *34*(1), 1-34. https://psycnet.apa.org/doi/10.1017/bec.2017.6

Mataix-Cols, D., Marks, I. M., Greist, J. H., Kobak, K. A., & Baer, L. (2002). Obsessive-compulsive symptom dimensions as predictors of compliance with and response to behaviour therapy: Results from a controlled trial. *Psychotherapy and Psychosomatics*, *71*(5), 255-262. https://doi.org/10.1159/000064812

Mathes, B. M., Van Kirk, N., & Elias, J. A. (2015). Review of psychotherapeutic approaches for OCD and related disorders. *Current Treatment Options in Psychiatry*, *2*, 284-296.

Md Rosli, A. N., Sharip, S., & Thomas, N. S. (2019). Scrupulosity and Islam: A perspective. *Journal of Spirituality in Mental Health*, 1-23. https://doi.org/10.1080/19349637.2019.1700476

Md Rosli, A. N., Sharip, S., & Wan Ismail, W. S. (2017). Religious-integrated therapy for religious obsessive-compulsive disorder in an adolescent: A case report and literature review. *Mental Health, Religion & Culture*, *21*(2), 204-209.

Mohamad Arip, A. A., Sharip, S., & Md Rosli, A. N. (2018). Islamic integrated exposure response therapy for mental pollution subtype of contamination obsessive-compulsive disorder: A case report and literature review. *Mental Health, Religion & Culture*, *21*(2), 210–218. https://doi.org/10.1080/13674676.2018.1436047

Murray, C.J.L., & Lopez, A.D. (1996). The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. *Global Burden of Disease and Injury Series, 1.*

Nursi, S. (2008). *Sözler, [The words*], Trans. Ş. Vahide. Sözler.

Nursi, S. (2010). *Sözler, [The words*], Trans. H. Akarsu. The Light.

Nursi, S. (2012). İşaratül İcaz, *[Signs of Miraculousness*], Trans. V. Şükran. Sözler.

Olatunji, B. O., Davis, M. L., Powers, M. B., & Smits, J. A. (2013). Cognitive-behavioral therapy for obsessive-compulsive disorder: A meta-analysis of treatment outcome and moderators. *Journal of Psychiatric Research*, *47*(1), 33-41. https://doi.org/10.1016/j.jpsychires.2012.08.020

Omranifard, V., Akuchakian, S., Almasi, A., & Maraci, M. R. (2011). Effect of religious cognitive-behavior therapy on religious content obsessive compulsive disorder and marital satisfaction. *European Psychiatry*, *26*(2), 1742-1742. https://doi.org/10.1016/S0924-9338(11)73446-0

Ost, L. G., Havnen, A., Hansen, B., & Kvale, G. (2015). Cognitive behavioral treatments of obsessive–compulsive disorder. A systematic review and meta-analysis of studies published 1993–2014. *Clinical Psychology Review*, *40*, 156-169. https://doi.org/10.1016/j.cpr.2015.06.003

Pearce, M. J., Koenig, H. G., Robins, C. J., Nelson, B., Shaw, S. F., Cohen, H. J., & King, M. B. (2015). Religiously integrated cognitive behavioral therapy: A new method of treatment for major depression in patients with chronic medical illness. *Psychotherapy (Chicago, Ill.), 52*(1), 56–66. https://doi.org/10.1037/a0036448

Eric .A. S., Lewin, A.B., (Eds.). (2017). *Treatment of scrupulosity in childhood obsessive compulsive disorder. Springer.*

Ponniah, K., Magiati, I., & Hollon, S. D. (2013). An update on the efficacy of psychological therapies in the treatment of obsessive-compulsive disorder in adults. *Journal of Obsessive-Compulsive and Related Disorders*, *2*(2), 207–218. https://doi.org/10.1016/j.jocrd.2013.02.005

Prasko, J., Raszka, M., Adamcova, K., Grambal, A., Koprivova, J., Kudrnovská, H., Latalova, K., & Vyskocilová, J. (2009). Predicting the therapeutic response to cognitive behavioural therapy in patients with pharmacoresistant obsessive-compulsive disorder. *Neuro Endocrinology Letters*, *30*(5), 615–623.

Rachman S. (1998). A cognitive theory of obsessions: Elaborations. *Behaviour Research and Therapy*, *36*(4), 385–401. https://doi.org/10.1016/s0005-7967(97)10041-9

Rachman, S., & de Silva, P. (1978). Abnormal and normal obsessions. *Behaviour Research and Therapy*, *16*(4), 233–248. https://doi.org/10.1016/0005-7967(78)90022-0

Rosa-Alcázar, A.L., Sánchez-Meca, J., Gómez-Conesa, A., & Marín-Martínez, F. (2008). Psychological treatment of obsessive-compulsive disorder: A meta-analysis. C*linical Psychology Review, 28*(8), 1310-1325. https://doi.org/10.1016/j.cpr.2008.07.001

Rothman, A., & Coyle, A. (2018). Toward a framework for Islamic psychology and psychotherapy: An Islamic model of the soul. *Journal of Religion and Health*, *57*, 1731-1744. https://doi.org/10.1007/s10943-018-0651-x

Rufer, M., Grothusen, A., Maß, R., Peter, H., & Hand, I. (2005). Temporal stability of symptom dimensions in adult patients with obsessive–compulsive disorder. *Journal of Affective Disorders*, *88*(1), 99-102. https://doi.org/10.1016/j.jad.2005.06.003

A. Bozkurt. (Ed.). (2021). *Kaplan & Sadock's comprehensive textbook of Psychiatry.* Anxiety Disorders (pp.1718- 88). Günes Medical Bookstore.

Safak, Y., Karadere, M. E., Ozdel, K., Ozcan, T., Turkcapar, M. H., & Kuru, E. (2014). Obsesif kompulsif bozuklukta bilişsel davranışçı grup psikoterapisinin etkinliğinin değerlendirilmesi [The effectiveness of cognitive behavioral group psychotherapy for obsessive-compulsive disorder]. *Turkish Journal of Psychiatry, 25*(4), 225-233.

Salkovskis, P. M. (1985). Obsessional-compulsive problems: A cognitive-behavioural analysis. *Behaviour Research and Therapy*, *23*(5), 571–583. https://doi.org/10.1016/0005-7967(85)90105-6

Sanavio, E. (1988). Obsessions and compulsions: The Padua Inventory. *Behaviour Research and Therapy*, *26*(2), 169–177. https://doi.org/10.1016/0005-7967(88)90116-7

Siev, J., & Cohen, A. B. (2007). Is thought–action fusion related to religiosity? Differences between Christians and Jews. *Behaviour Research and Therapy*, *45,* 829–837. https://doi.org/10.1016/j.brat.2006.05.001

Simpson, H. B., Huppert, J. D., Petkova, E., Foa, E. B., & Liebowitz, M. R. (2006). Response versus remission in obsessive-compulsive disorder. *The Journal of Clinical Psychiatry*, *67*(2), 269–276. https://doi.org/10.4088/jcp.v67n0214

Stanley, M. A., & Turner, S. M. (1995). Current status of pharmacological and behavioral treatment of obsessive-compulsive disorder. *Behavior Therapy, 26*(1), 163–186.

Starcevic, V., & Brakoulias, V. (2008). Symptom subtypes of obsessive-compulsive disorder: Are they relevant for treatment? *The Australian and New Zealand Journal of Psychiatry*, *42*(8), 651–661. https://doi.org/10.1080/00048670802203442

Toprak, T. B. (2018). Dini obsesyon ve kompulsiyonların psikoterapisinde kuramlar, imkanlar, sınırlılıklar [The treatment of scrupulosity: between theories, opportunities and limits]. *Turkey Journal of Holistic Psychotherapy, 1*(1), 123-141.

Toprak, T. B. (2022). *Dini içerikli psiko-eğitim eklenmiş bilişsel davranışçı grup psikoterapisinin dini içerikli obsesyon ve kompulsiyonları olan hastalardaki etkililiği* [Effectiveness of religious psycho-education integrated cognitive behavioral group therapy in the treatment of the patients with religious obsessions and compulsions](Publication No. 719272) [Master's thesis, Hasan Kalyoncu University].

Toprak, T. B. & Emül, H. M (2016, July 27-31). *A contrubition attempt to contemporary OCD theories: "Meratib-i ilim of dimağ" framework within Islamic tradition* [Conference presentation]. Annual OCD Congress, Chicago, United States.

Toprak, T.B. (2018, June 7-9) *An attempt for alternative approach for the structure of human and its applications: Ilm'u nafs* [Conference presentation]. World Congress of Pyshcotherapy, Amsterdam, Netherlands.

Toprak, T.B. (Ed.). (2021). *İslam ve psikoterapi: Bir model ve uygulama örneği [Islam and psychotherapy: An example of a model and application].* (pp.166-167). Muhit Book.

Torres, A. R., Prince, M. J., Bebbington, P. E., Bhugra, D., Brugha, T. S., Farrell, M., Jenkins, R., Lewis, G., Meltzer, H., & Singleton, N. (2006). Obsessive-compulsive disorder: Prevalence, comorbidity, impact, and help-seeking in the British National Psychiatric Morbidity Survey of 2000. *The American Journal of Psychiatry*, *163*(11), 1978–1985.

Tukel, R., Polat, A., Ozdemir, O., Aksut, D., & Turksoy, N. (2002). Comorbid conditions in obsessive-compulsive disorder. *Comprehensive Psychiatry, 43*(3), 204–209. https://doi.org/10.1053/comp.2002.32355.

Turkcapar, H. (2005). Yale Brown Obsession Compulsion Scale Self-Assessment Form (YBOCS-Self-Report). https://www.bilisseldavranisci.org/images/stories/olcekler/yobcshakan.pdf

Twohig, M. P., Abramowitz, J. S., Bluett, E. J., Fabricant, L. E., Jacoby, R. J., Morrison, K. L., Reuman, L., & Smith, B. M. (2015). Exposure therapy for OCD from an acceptance and commitment therapy (ACT) framework. *Journal of Obsessive-Compulsive and Related Disorders, 6,* 167–173. https://doi.org/10.1016/j.jocrd.2014.12.007

Twohig, M. P., Abramowitz, J. S., Smith, B. M., Fabricant, L. E., Jacoby, R. J., Morrison, K. L., Bluett, E. J., Reuman, L., Blakey, S. M., & Ledermann, T. (2018). Adding acceptance and commitment therapy to exposure and response prevention for obsessive-compulsive disorder: A randomized controlled trial. *Behaviour Research and Therapy*, *108*, 1–9.

Ulusoy, M., Sahin, N.H., & Erkmen, H. (1998). Turkish Version of the Beck Anxiety Inventory. *Journal of Cognitive Psychotherapy, 12*, 163-172.

van Oppen, P., van Balkom, A. J., de Haan, E., & van Dyck, R. (2005). Cognitive therapy and exposure in vivo alone and in combination with fluvoxamine in obsessive-compulsive disorder: A 5-year follow-up. *The Journal of Clinical Psychiatry*, *66*(11), 1415–1422. https://doi.org/10.4088/jcp.v66n1111

Van Oudheusden, L., van de Schoot, R., Hoogendoorn, A., van Oppen, P., Kaarsemaker, M., Meynen, G., & van Balkom, A. (2020). Classification of comorbidity in obsessive-compulsive disorder: A latent class analysis. *Brain and Behavior*, *10*(7), e01641. https://doi.org/10.1002/brb3.1641

Vyskocilova, J., Prasko, J., & Sipek, J. (2016). Cognitive behavioral therapy in pharmacoresistant obsessive–compulsive disorder. *Neuropsychiatric Disease and Treatment*, *12*, 625-639.

Whittal, M. L., Robichaud, M., Thordarson, D. S., & McLean, P. D. (2008). Group and individual treatment of obsessive-compulsive disorder using cognitive therapy and exposure plus response prevention: A 2-year follow-up of two randomized trials. *Journal of Consulting and Clinical Psychology*, *76*(6), 1003–1014. https://doi.org/10.1037/a0013076

Williams, A. D., Lau, G. & Grisham, J. R. (2013). Thought-action fusion as a mediator of religiosity and obsessive-compulsive symptoms. *Journal of Behavior Therapy and Experimental Psychiatry*, *44*(2), 207–212. https://doi.org/10.1016/j.jbtep.2012.09.004

Wilson, K. A., & Chambless, D. L. (1999). Inflated perceptions of responsibility and obsessive-compulsive symptoms. *Behaviour Research and Therapy, 37*(4), 325–335.

Witzig,T. (2017, July 7-9). *Developing effective treatment plans for religious scrupulosity with emphasis on adult clients* [Conference presentation]. Annual OCD Congress, San Francisco, United States.

World Health Organization. (2001). *Mental Health: A call for action*. Geneva: by World Health Minister. https://www.mhinnovation.net/sites/default/files/downloads/resource/Mental%20Health%20A%20Call%20for%20Action%20by%20World%20Health%20Ministers.pdf

Zandberg, L. J., Zang, Y., McLean, C. P., Yeh, R., Simpson, H. B., & Foa, E. B. (2015). Change in obsessive-compulsive symptoms mediates subsequent change in depressive symptoms during exposure and response prevention. *Behaviour Research and Therapy*, *68*, 76–81. https://doi.org/10.1016/j.brat.2015.03.005