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# Adaptation to Cancer in the Context of Spirituality

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**Key words**
Coping strategies, cancer survivors, trauma, spirituality

**The study is focused on the selection of coping strategies and their relationship with the meaning of religion and spirituality in cancer survivors. The individual coping strategies were measured using the Mini-Mental Adjustment to Cancer questionnaire (Mini-MAC; Watson *et al.* 1994), and spirituality was measured using the Centrality of Religiosity Scale (CRS-5; Huber and Huber 2012). In total 126 people participated in the study, out of whom 100 were female. The average age of the participants was 64 years (SD = 8.74). The results showed that the use of strategies such as helplessness/hopelessness and anxious preoccupation correlated negatively with public as well as private practice of faith. Cancer survivors with ideological, intellectual of spiritual experience and with the experience of faith use adaptive coping strategies, namely fighting spirit and fatalism.**

## 1 Introduction

The current coping models suggest that inadequate adaptation following a traumatic experience is a result of a discrepancy between demanding events associated with stress and the meaning-making system. There are two different aspects of the meaning-making process – global and situational (Park 2010 in Currier, Holland and Malott, 231). The global meaning relates to the essential believes (values, goals, and the subjective meaning of a person) – all these functions together bring safety and meaning to life. The situational meaning largely refers to the way a person assesses specific events. The extent of a posttraumatic symptomatology corresponds to the extent in which traumatic events disrupted certain dimensions of the global meaning.

A higher level of self-efficacy and dispositional optimism contribute to better acceptance of cancer (Rzonca *et al.* 2018, 2484). Optimism is more or less related to a flexible use of adaptation strategies of coping with stress in terms of stressor controllability rather than to rigid coping strategy models (Solberg Nes and Segerstrom 2006). The cancer diagnosis associated with patient's dispositional pessimism and situ-

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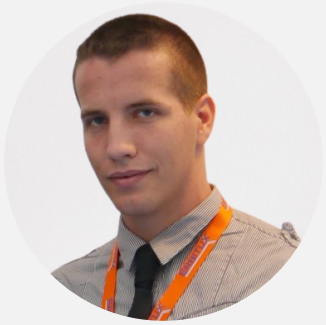

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ational unemployment predicts depression symptoms. The perception of cancer explains 8% of cases of experiencing anxiety and 4.8% of depression symptoms variability (Zhang *et al*. 2018, 8).

Cancer patients experience feelings of helplessness, tiredness and irritability to a greater extent, they are more reserved and less assertive when in contact with others (Žiaková *et al*. 2017, 667). The use of maladaptive coping strategies in patients with colorectal cancer is related to the insufficient perception of social support (Kang *et al*. 2008, 592). Search for social support as a coping strategy together with religiosity and optimism (Prati and Pietrantoni 2009, 375), instrumental support, positive reframing, and humor (Schroevers and Teo 2008, 1239) prove to be important in the context of posttraumatic development. The social support is linked to long-term positive effects in the context of health, contributes to improved functionality of immune system, decreased blood pressure, reduces the risk of mortality (Hogan, Linden and Najarian 2002; Tschuschke 2004), contributes to better psychosocial adaptation (Northouse 1988, 91) and helps to cope with the cancer-related stress (Krishnasamy 1996, 757).

Spirituality plays an important role in adapting to cancer. It has been proven that religiosity as a coping strategy is a significant predictor of posttraumatic growth (Prati and Pietrantoni 2009, 376). Spirituality is an attribute of every person, and there is an individual differentiation of spirituality, which concerns not only the quantity but also the quality of spiritual life. The essence of the psychological conception of spirituality is self-transcendence, which consists in transcending oneself, growth, development, "*moving upwards*" (Heszen and Gruszczyńska 2004, 5). According to Stríženec (2001), spirituality is an individual phenomenon, in which spiritual experience is emphasized, and is related to personal transcendence and meaningfulness. It focuses on discovering and maintaining a relationship with the sacred. Spirituality can be viewed as a form of intelligence because it predicts functioning and adaptation and offers capabilities that enable people to solve problems and attain goals. Conceiving spirituality as a sort of intelligence extends the psychologist's conception of spirituality and allows its association with the rational cognitive processes like goal achievement and problem solving (Hosseini 2010, 179). Spirituality also means a spiritual experience that is not related to religious interpretation. It involves sensitivity to spiritual values; it is part of character building (Cagaš 2005). Spirituality in secular understanding expresses a deep connection between people and nature, people, and higher beings (Reich 2000, 125).

Spirituality is generally, albeit not always, beneficial for people dealing with the consequences of trauma. Traumatic experiences may lead to deepening of spirituality. Experiencing spirituality can help patients gain a sense of control over their disease, leading to a better prognosis of the disease (Abra *et al*. 2004). Positive religious coping, religious openness, readiness to face existential issues, religious participation and intrinsic religiosity are usually associated with posttraumatic growth (Shaw, Joseph and Linley 2007, 1). Spirituality experiences contribute to gaining of social support, accepting difficulties, and discovering a new meaning in life.

The aim of the study is to analyze the relationship between spiritual experience and adaptation to cancer. We are interested in the relationship of experiencing faith in the context of using various coping strategies in cancer survivors.

# 2 Method

## 2.1 Sample and Procedure

There were 126 participants in the study, out of whom 100 were females. The average age of the participants was 64 years (SD = 8.74). The sample was heterogeneous as regards the type of cancer. The most frequent diagnosis was breast cancer (48 cases) followed by gastrointestinal cancer (17 cancer), ovarian cancer (13 cases) and testicular cancer (8 cases). The average time elapsed after the diagnosing of cancer was 39 months (SD = 34.46), about 65% of patients were in the remission and 17 patients had experienced one or more relapses of cancer. As regards sociodemographic data, 61.9% were married, with two children, and 65.5% had achieved high-school level education. Approximately one third of the participants (48 cases) reported cancer in the family anamnesis.

Cancer survivorship is defined as a process that begins at the moment of diagnosis and continues throughout life (Marzorati *et al*. 2016). National Coalition for Cancer Survivorship (2014) defines cancer survivorship as cancer continuum – living with, through, and beyond a cancer diagnosis. On this continuum, three phases of survivorship can be identified: acute, which refers to the diagnosis and treatment of cancer; extended, related to the period following treatment; and permanent; survivorship as equivalent to complete recovery (Mullan 1985). Due to our effort to reduce selection bias (range restriction) (Pedhazur and Schmelkin 1991), we included patients into data collection regardless of the fact, whether their treatment had been finished or not.

The study was conducted from November 2018 to February 2019. The research project *Cognitive-Existential Profile and Specifics of Posttraumatic Growth in Cancer Patients* was approved by the Ethics Committee of Trnava University. The participation in the study was voluntary, anonymous and the patients were able to abandon the study at any stage without any consequences. The patients confirmed their participation in the study through an informed consent. Data were collected online in combination with personal participation of the researchers. The basic criteria for participation were the age of eighteen and more, being a patient with a cancer diagnosis, without a serious mental or physical condition and not being terminally ill.

## 2.2 Measures

*Mini-Mental Adjustment to Cancer* (Mini-MAC; Watson *et al*. 1994) is a 29-item questionnaire used to measure coping strategies in cancer patients. It maps five different strategies of coping with cancer (Grassi *et al*. 2005): *helplessness-hopelessness* (pessimistic attitude towards the illness) ($\Omega_{TOTAL}$ =.89); *cognitive avoidance* (avoiding direct confrontation with the problems associated with the illness) ($\Omega_{TOTAL}$ =.70); *fatalism* (resigned attitude towards the illness) (alpha =.28); *anxious preoccupation* (experiencing the illness through anxiety and tension) ($\Omega_{TOTAL}$ =.75); *fighting spirit* (tendency to face the illness actively) ($\Omega_{TOTAL}$ =.64). The participants respond to statements using a 4-item Likert scale (from 1–strongly disagree, to 4–strongly agree).

The Centrality of Religiosity Scale (CRS-5; Huber and Huber 2012) is a scale used to measure experience of faith to individuals. It includes a multidimensional model of spirituality. In the study, we used a shortened 5-item version of the scale ($\Omega_{TOTAL}$ =.80) which includes five dimensions: 1) *Intellectual dimension of spirituality* ("How often do you think about religious issues?") on the scale from 1 to 5 (very often – never); 2) *Ideological dimension of spirituality* ("To what extent do you believe that God or something divine exists?") on the scale from 1 to 5 (absolutely – not at all); 3) *Public practice of faith* ("How often do you take part in religious services?") on the scale from 1 to 6 (more than once a week – never); 4) *Private practice of faith* ("How often do you pray?") on the scale from 1 to 7 (several times a day – never); 5) *The dimension of the experience of faith* ("How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?") on the scale from 1 to 5 (very often – never).

# 3 Results

## 3.1 Descriptive Analysis

The descriptive statistics of coping with cancer and spirituality in cancer survivors are shown in the Table 1.

**Table 1**
**Descriptive Statistics**

| Variable | M | SD | SE | Min | Max |
|---|---|---|---|---|---|
| 3. Helplessness/Hopelessness | 16.60 | 6.29 | 0.56 | 9 | 36 |
| 4. Cognitive Avoidance | 12.02 | 2.48 | 0.22 | 4 | 16 |
| 5. Fatalism | 12.21 | 2.01 | 0.18 | 5 | 16 |
| 6. Anxious Preoccupation | 14.23 | 3.37 | 0.30 | 7 | 23 |
| 7. Fighting Spirit | 16.08 | 2.84 | 0.25 | 8 | 20 |
| 12. Spirituality | 16.52 | 5.91 | 0.53 | 5 | 28 |
| 13. Intellectual Dimension of Spirituality | 3.31 | 1.35 | 0.12 | 1 | 5 |
| 14. Ideological Dimension of Spirituality | 3.87 | 1.39 | 0.12 | 1 | 5 |
| 15. Public Practice of Faith | 2.61 | 1.58 | 0.14 | 1 | 6 |
| 16. Private Practice of Faith | 3.61 | 1.99 | 0.35 | 1 | 7 |
| 17. Experience of Faith | 3.13 | 1.39 | 0.12 | 1 | 5 |

Note: Due to inaccurate translation of item number 13 from MINIMAC in Slovak, only 6 items instead of 7 were used for the total score of anxious preoccupation.

**Table 2**
**Correlations with Confidence Intervals**

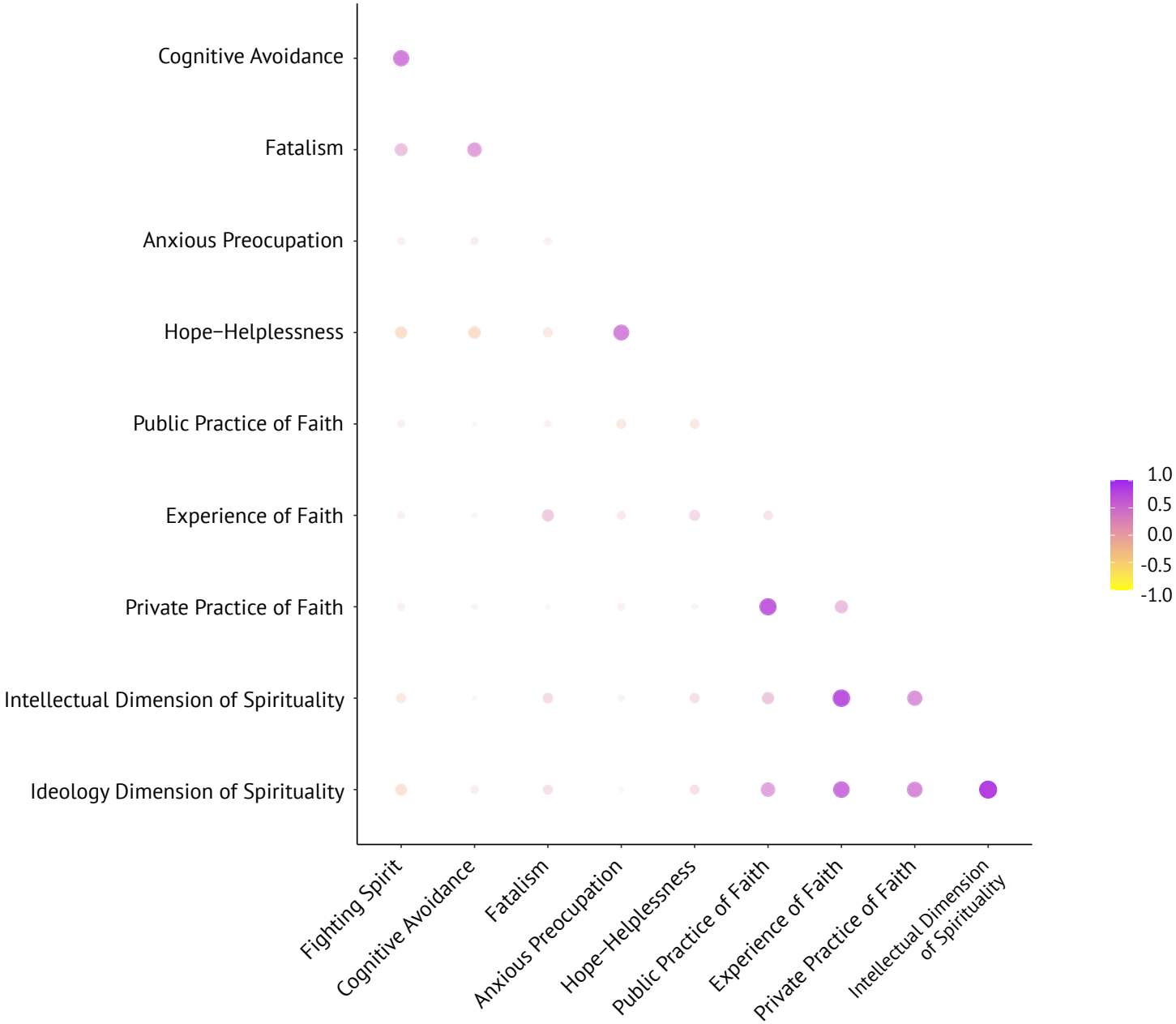
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Helplessness/ Hopelessness | - | | | | | 0.313 | 0.298 | 1.240 | 0.407 | 1.106 |
| 2. Anxious Preoccupation | .64*** | - | | | | 0.240 | 0.206 | 0.555 | 0.235 | 0.439 |
| | [.52.73] | | | | | | | | | |
| 3. Fighting Spirit | -.32*** | -.09 | - | | | 0.662 | 1.919 | 0.239 | 0.210 | 0.235 |
| | [-.47, -.15] | [-.26.09] | | | | | | | | |
| 4. Fatalism | -.13 | -.04 | .45*** | - | | 0.747 | 0.404 | 0.229 | 0.211 | 15.209 |
| | [-.30.05] | [-.21.14] | [.30.58] | | | | | | | |
| 5. Cognitive Avoidance | -.32*** | -.15 | .68*** | .56*** | - | 0.206 | 0.254 | 0.213 | 0.258 | 0.227 |
| | [-.47, -.15] | [-.32.03] | [.57.76] | [.43.67] | | | | | | |
| 6. Intellectual Dimension of Spirituality | .08 | .05 | -.14 | .15 | -.01 | - | | | | |
| | [-.09.26] | [-.13.22] | [-.31.04] | [-.03.31] | [-.18.17] | | | | | |
| 7. Ideological Dimension of Spirituality | .08 | .01 | -.19* | .11 | -.06 | .80*** | - | | | |
| | [-.10.25] | [-.17.18] | [-.36, -.02] | [-.07.28] | [-23.12] | [.73.86] | | | | |
| 8. Public Practice of Faith | -.17* | -.13 | -.05 | .04 | -.02 | .22* | .38*** | - | | |
| | [-.34.00] | [-.30.05] | [-.22.13] | [-.13.22] | [-.20.15] | [.05.38] | [.22.52] | | | |
| 9. Private Pratice of Faith | -.11 | -.05 | -.02 | .02 | .06 | .46*** | .51*** | .73*** | - | |
| | [-.28.07] | [-.22.13] | [-.19.16] | [-.16.19] | [-.11.23] | [.31.59] | [.36.63] | [.64.80] | | |
| 10. Experience of Faith | .17 | .11 | -05 | .26*** | .04 | .75*** | .68*** | .06 | .29*** | - |
| | [-.01.33] | [-.06.28] | [-.22.13] | [.09.42] | [-.13.21] | [.66.82] | [.58.77] | [-.12.23] | [.12.44] | |

Note: The values in square brackets indicate the 95% confidence interval for each correlation. * indicates $p$ <.05. ** indicates $p$ <.01. *** $p$ <.001. In the upper diagonal, the Bayes factor ($BF_{10}$) for the correlations is shown.

## 3.2 Correlations

Table 2 shows the correlations between coping with cancer and spirituality domains. Overall, spirituality correlates weakly with different types of coping with cancer. The strongest positive correlation was found between Experience of faith and Fatalism as a domain of mental adjustment on cancer. This correlation reached small effect size and there was strong evidence for this correlation according to Bayes factor. Experience also correlated on low magnitude with Helplessness/Hopelessness and anxious preoccupation. Low negative correlation was also found between Public practice of faith and Helplessness/Hopelessness, and with Anxious preoccupation, between Private practice of faith and Helplessness/Hopelessness, and between Ideology and Fighting spirit. For these correlations, just anecdotical evidence was found according to Bayes factors. Strength of the correlations is also shown in Figure 1.

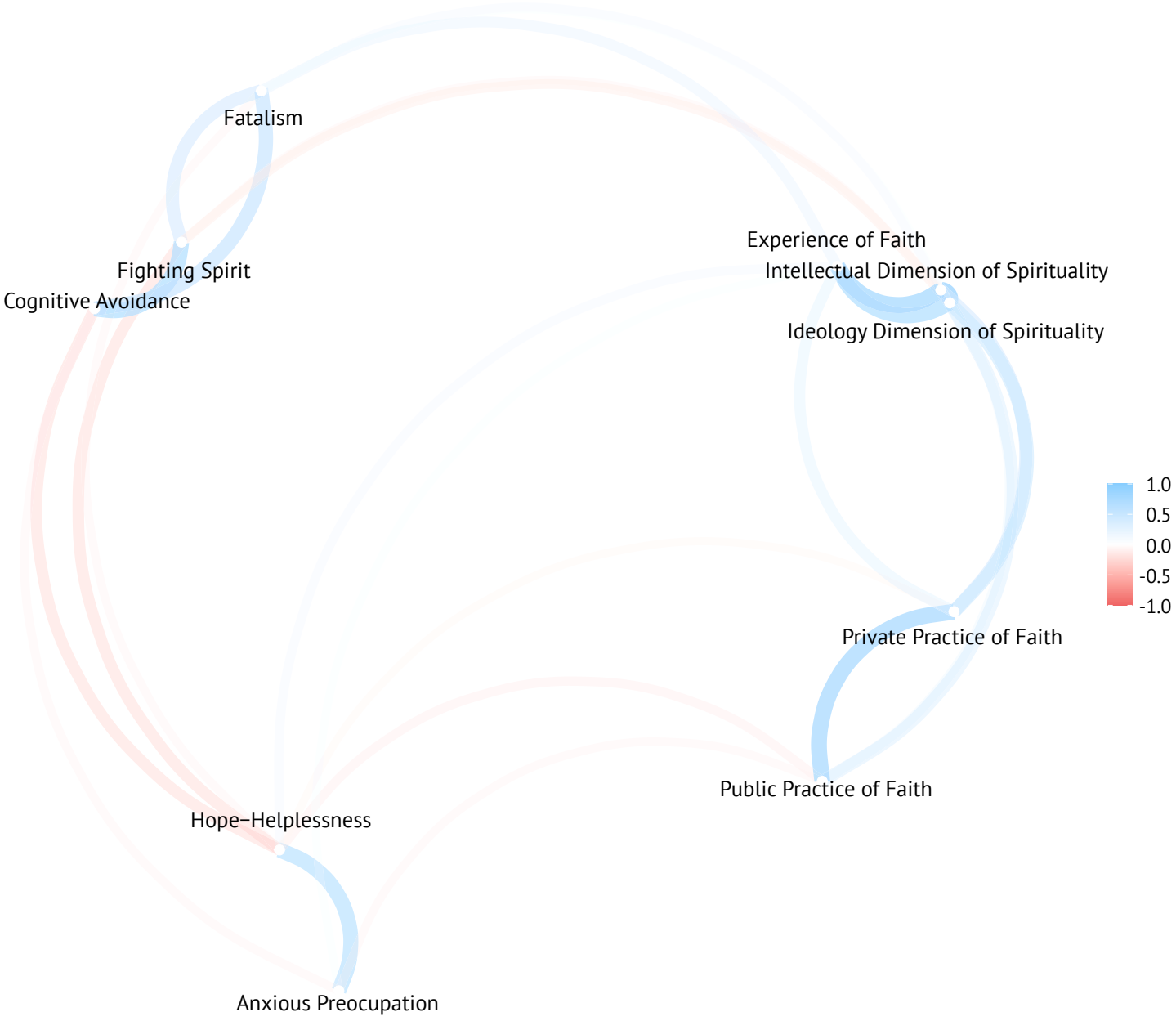
**Figure 1**
**Correlations Between the Ways of Coping with Spirituality Cancer Survivors**



## 3.3 Correlation Network

Figure 2 shows how different types of coping with cancer and different domains of spirituality are interconnected within the correlation network. Public and Private practice of faith are strongly positively interconnected, and both these spirituality domains are negatively connected to Helplessness/Hopelessness and Anxious preoccupation (maladaptive coping) that are both strongly related to each other. On the other hand, Intellectual, Ideology and Experience domains are strongly related to one another and are strongly related to Fighting spirit and Fatalism (adaptive coping) compared to maladaptive coping. Intellectual and Ideological domains of spirituality are negatively related to Fighting spirit and positively related to Fatalism, such as Experience of faith domain.

**Figure 2**
**Types of Coping in Relation Domains of Spirituality**



## 4 Discussion

The aim of the present study was to analyze the experience of various ways of spirituality practice (public, private, experience of faith, intellectual, ideological) in the context of coping strategies (fighting spirit, fatalism, anxious preoccupation, cognitive avoidance, helplessness/hopelessness) in cancer survivors.

Traumas do not represent everyday problems. They challenge the essential construction of meaning which people experience in their lives and disrupt the sense of cohesion and meaning of life that had existed before them. Religiosity represents a strength which may enhance the meaning in situations where it has been lost. Although the areas of humor and hope have been the scope of study for longer time, the positive contribution of spirituality and religiosity is a newer topic of research. Therefore, it is necessary to distinguish the focus on spirituality when dealing with trauma in lives of cancer patients (O'Rourke, Tallman and Altmaier 2008, 227).

Spirituality and religiosity are closely linked to better physical health results (Pargament *et al*. 2004; Koenig 2012), improve the quality of life and reduce the occurrence of anxiety and depression in cancer patients (Chaar *et al*. 2018, 2581). Spirituality correlates significantly with the choice of coping strategies (Cotton 1999, 429) and represents an important factor in adaptation to cancer (Garland 2007, 949).

The results of our analysis showed that the use of maladaptive coping strategies in form of helplessness/hopelessness and anxious preoccupation correlated negatively with public as well as private practice of faith. Patients with the experience of faith selected fatalism as a strategy of adaptation to cancer. The results also confirmed that the patients with ideological, intellectual spirituality experience and the experience of faith used adaptive coping strategies, namely fighting spirit and fatalism. Similarly, Cotton (1999, 451) pointed out that the spirituality correlated positively with the subscales of fighting spirit and fatalism and negatively with experiencing helplessness, hopelessness, and anxiety. Inclusion of togetherness with God or a respect towards God into the process of coping with the illness has a positive impact on psychosocial adaptation. Moreover, religious coping explains a unique difference in adaptation to illnesses beyond the explanation of the contribution presented by the influence of the illness, demographic variables, and social support. Religious coping may apparently present one of the more important factors in coping with the illness, similarly to the available social support (Nairn and Merluzzi 2003, 433). Spirituality practices contribute to experiencing of happiness and satisfaction in life (Thune-Boyle *et al*. 2006, 151).

## 5 Conclusion

The results of the research showed a connection between the experience of faith and the management of oncological disease. It is suggested for the important directions of future research to focus on the need of more thorough analysis of the variables of spirituality together with the concepts of coping with cancer through longitudinal research aimed at learning about the connections leading to the posttraumatic growth.

The present study was limited in several ways. First, the cross-sectional design limits the complex understanding of mutual links between spirituality experiences and coping with cancer in cancer survivors. Second, more thorough study of spirituality in the context of further protective and risk factors associated with cancer would bring a deeper insight into the topic.

## Note

Data, analytical code, and additional materials are available at https://osf.io/59zmp/.

## Acknowledgment

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