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**THE MEDIATION EFFECT OF RESPONSE EXPECTANCIES BETWEEN
RELIGIOUS COPING AND NON-VOLITIONAL RESPONSES IN PATIENTS
WITH BREAST CANCER**

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Abstract: Even though there are several studies showing a clear connection between religious coping and distress, only few of them illustrate models of mediation between religious coping and its psychological effects. In this paper we investigate the mediation effect that response expectancies have in the relation between religious coping and non-volitional responses (distress, fatigue and weakness). The study was made on 38 females diagnosed with breast cancer and which were following a treatment with radiotherapy sessions. The results confirmed the presence of a mediation effect in the case of negative religious coping. When the mediator was present we registered significant indirect effects ranging from 37% to 47% of the Total effect that negative religious coping had on its outcomes. Our results suggested that religious coping could act like a placebo, the appearance of its effects being mediated by response expectancies. Due to its significant prediction effect upon non-volitional responses, we propose the introduction of the concept of religious response expectancies.

Key Words: religious coping, placebo, religious believes, response expectancies, breast cancer, coping strategies, Romanian sample

Introduction

According to some of the analytical contemporary philosophers, the term *belief* involves an attitude that people have when they believe something to be true.¹ It is generally acknowledged that many individuals can believe in something without that something to be objectively true. Therefore, there is a difference between belief and knowledge. As Gettier (1963) points it out, knowledge is considered a species of belief, and a belief is considered to become knowledge when there are accepted evidences that that belief is true.¹ It is possible, of course, as long as it does not exceed certain pathological thresholds, for our subjective reality to operate in an efficient and functional manner, without requiring an objective confirmation of all things we believe in. The phenomenon to *believe in* is constantly found in the field of religion.

Spirituality and religiosity

Cavalli, Pargament and Nasr (2002) say that most people belonging to a religious cult declare that religious faith is a component of critical importance in their life², i.e. 75% to 85% of the population of United States of America. That makes the field of religion to represent a particular importance in the psychological research. The need for studying the religious phenomena within a framework of scientific psychological research, determined Psychology of Religion to transpose religious concepts in an objectively measurable pattern. Thus, two basic concepts have emerged within the field of Psychology of Religion: spirituality and religiousness. Although these constructs are sometimes overlapping at level of definitions, they also have some distinctive features³.

Spirituality is described as a life philosophy that involves seeing beyond physical, intellectual, and ethical realms into a more expansive truth or awareness of something sacred that permeates the world in different ways³. Spirituality may involve a personal transformation, a search of the supreme and sacred truth⁴. Different authors declare that religion describes a more formalized expression of a spiritual perspective via beliefs, rituals and conducts that are often organized by institutions³. Many common features of religion can be found in spirituality and vice versa⁵. But in our opinion the core meaning of religious faith is located within the concept of spirituality. However, many of the tools used to measure religious faith, take into account only components of specific behavior that Christian people do as a consequence of being religious. For example, Santa Clara Religious Faith Questionnaire⁶ measures the intensity of faith, and eight items out of ten contain the term "faith". However, these items do not measure the intensity of faith per se, but only the behaviors related to the concept of faith (e.g. *I look to my faith as*

providing meaning and purpose in my life, I enjoy being around others who share my faith). Therefore, in our study, we propose a new way to operationalize the term *spirituality* and we aim to identify an optimal measure of the core meaning of the faith of individuals.

Positive religious coping vs. negative religious coping

Several studies indicate that there are positive correlations between religious coping beliefs and practices, mental and physical health, as well as longevity.⁷ Spiritual well-being is related with physical and psychological well-being in patients with chronic disease.³ The presence of religious coping was correlated with small rates of depression, a better state of mind, a better physical health and reduced rates of mortality.⁸ In a study with patients diagnosed with AIDS, those individuals who tended to be more spiritual and religious had higher levels of self-esteem and life satisfaction.⁹ Numerous studies have investigated the role of religion/spirituality in health and healing.¹⁰ What is impressive is that more than three-quarters of these studies show a positive relationship between religion/spirituality and physical health.¹⁰ Those individuals who believe in God and reported to pray during an illness have also reported higher rates of healing than those who do not do that.³ Well-being reported by individuals who used different religious coping strategies is not just declared and theoretically sustained. These effects of religious coping manifest also at the biological level. Connections between proper functioning of the immune system and spiritual and religious involvement have been demonstrated in several populations including women with breast cancer who were at the stage of metastasis and in elderly people from general population.³ However, these beneficial results associated to religious coping, are not always to be found.

Many studies show that certain types of religious coping are associated with a high level of distress, at least on short term.⁸ One can notice that the term *religious coping* implies more than one dimension. Religious coping is considered to be beneficial or harmful depending on the specific type of religious coping used by an individual. So, religious coping can be considered as an ambivalent phenomenon, which might not automatically lead to positive responses.¹¹ By making a factorial analysis of the forms of religious coping, the authors Pargament et. al. (1998) identified two major patterns of religious coping, i.e. positive and negative.¹¹ Positive religious coping, which denotes calling with confidence to religion for support, seem to be beneficial for individuals who are going through stressful situations as Ano and Vasconcelles (2005) and Koenig et. al. (2001) say.¹¹ On the other hand, Ano and Vasconcelles (2005) claim that negative religious coping reflect uncertainty and conflictual ideas about religion, and it is generally considered to be maladaptive.¹¹

The authors Pargament, Koeing and Perez⁸ present the RCOPE scale validation, which measures religious coping. This scale divides religious coping strategies in two factors: positive religious coping and negative religious coping. The RCOPE scale is regarded as a well-grounded method of measuring the two coping styles.¹¹ Subsequently, Pargament, Feuille and Burdzy¹² present the validation studies made with a short version of this scale, BriefRCOPE. Regarding the mechanism that underlie the functioning of religious coping, in a study on people who were infected with HIV, the authors concluded that although the results show association between spirituality and physical/mental functionality, there is a need to clarify the physiological and psychological mechanisms which connect spirituality with physical health.³ Some studies show that self-efficacy mediates, at least partially, the association between positive religious coping and adjustment, on a population who suffered from different types of cancer¹¹ In another study the authors Ai et al.¹³ suggest a model in which hope and social support are mediators in religious coping and reduce the level of distress relation.

The mechanisms of coping and religious coping

According to Lazarus and Folkman (1984) coping means the cognitive and behavioral effort point to reduce, master or tolerate the internal or external requests that exceed personal resources.¹⁴ From this point of view, coping is always a transactional process between the individual and environment¹⁴, which involves a diagram of a simple coping scheme: *stressor-individual* relation. As a response to the action of the stressor, individuals run different coping processes, which will cause some responses, so we will consider, therefore, that the operational diagram of coping is *coping-response*, which means that coping determines a certain response.

In our opinion, religious coping implies a different type of schema, which involves three parts: *individual-Divinity-stressor*. In the relation individual-stressor, Divinity comes as a third part. Thus, individuals may invoke the Divinity by using religious coping in order to seek help to solve problems. Thus, in the same way as in the case of the functional schema of nonreligious coping, the operating diagram of religious coping becomes: *coping (religious)-Divinity-response*. The invocation of Divinity is supported by the definition of religiosity itself. Religious persons show an attribution style different from non-religious ones, and it is an external attribution style.¹⁵ This type of attribution gives a pattern that can help them to cope with stressful events.¹⁶ In our opinion, there are only two possible ways which can explain the functioning of religious coping and the results mentioned above:

1. God is an external entity which intervenes in resolving the

problem. Then, we talk about an active element, external to the person. So looking at the three part schema, the Divinity is physically present.

2. God as an external element is missing and the resolving of problem will be facilitated by the intrinsic personal factors, which may be accounted as the faith in God.

Keeping the function schema we presented, in our investigation we will take into account the second route. Speaking from a psychological point of view, the mechanisms that could explain the function of such a route could be similar to the ones found in the placebo effect. Moreover, compared to the Placebo effect, where some authors suggest it may account up to 55% of any reported therapeutic benefit in relation to pain control,¹⁷ we can assume that it does not even matter if the first option is true or not. The truth value of the first option does not exclude the truth value of the second one. It is well known that the effects of a Placebo appear concurrently with the action of the active substance. So we expect that the psychological intrinsic mechanisms for mediating the effects of religious coping might be concretized by response expectancies.

In 1985, Irvin Kirsch proposed the term response expectancy. This term was derived from the studies that emphasized the effects of the Placebo effect. The Placebo effect paradigm is as follows: "a patient or research participant is given an inert substance and led to believe that it has physical properties that produce particular effects. He or she reports experiencing the expected effects. Because the treatment does not in fact have the physical properties ascribed to it, it is generally assumed that the effects are due to the recipient's beliefs and expectations".¹⁸ What make the effect present are beliefs, that the author Kirsch (1985) and (1990) called response expectancies.¹⁸ Response expectancies are capable of producing non-volitional responses that are not mediated by other psychological variables, with a high probability of self-confirming, apparently automatic.¹⁹ Studies show that 35% of the persons who receive a treatment respond to placebo in the same way they would have done to the treatment.²⁰ Since they appeared in the literature, response expectancies and non-volitional responses have been studied in three major fields: 1. the placebo effect; 2. the effects of hypnotic suggestion and 3. the effects of pharmacological agents.¹⁹ Making a parallel between religious coping and the placebo effect, a functional resemblance appears. *The actions* (rituals from religious coping) are *the treatment* (in the case of placebo effect), *the expectancy* (that God will help him/her, despite being absent), is the same as *the expectancy* (that the active substance exists and it will produce the effect, despite of its absence), and *the response* in the first case is functionally the same as the placebo response.

One of the reasonable arguments that could be brought against this rationale is the following: with the placebo effect, the treatment itself, without expectancies, has no value. The substance present in the treatment is inert, so without being invested with expectancies, it would

produce no effect. But regarding to religious coping, it is possible that its actions *per se* could determine some effects. Even though this argument is valid, we believe that religious coping is an unbreakable construct composed of actions and faith in God. The actions alone made without faith, lose their meaning of "religious coping". We cannot deny the presence of ritual actions and their idiosyncratic effect which could be possible. But judging that these specific actions aren't to be found alone, without the investment of faith in God, we will consider that the effects related to them can't appear separated from the effects of faith in God, hence these two parts make a whole, as a consequence of one's faith expectancies. Religious coping is different from non-religious coping, by its mechanism and results.¹¹ This makes us suppose that this qualitative difference might be due to the mechanism of response expectancies.

Evidence shows that response expectancies influence memory, pain perception, psychotherapy response, sexual arousal, asthmatic response and affect.²¹ Also response expectancies proved to be very good predictors of positive and negative non-volitional responses.²¹

In conclusion, there is a clear connection between positive religious coping and positive outcomes, and negative religious coping and negative outcomes. Likewise, the connection between positive response expectancies and positive non-volitional responses and negative response expectancies and negative non-volitional outcomes, indicates to us a possible connection between these two concepts: religious coping and response expectancies.

Response expectancies are most studied in the contexts in which a person is about to experience a stressful event. Such studies were made on populations of women with breast cancer,²² i.e., on the level of fatigue that females with breast cancer experience after the radiotherapy session.²³ The study made by Ai et al.¹³ investigated the mediation effect of hope in the relation of religious coping which was made by patients who were about to undergo heart surgery and their level of distress after the surgery. A review made on women with breast cancer population shows that 22% of the females which had mastectomy were suffering of depression.²⁴ Hence, we consider that women with breast cancer, who follow a treatment with radiotherapy, represent a proper population for the study of the connection between religious coping, response expectancies and level of distress.

The aim of our study is to investigate a possible effect of mediation by response expectancies (RE), between religious coping (RC) and its outcomes. These outcomes are operationalized by non-volitional responses felt by patients diagnosed with breast cancer after radiotherapy sessions. Part of the response expectancies studied in this paper refer to the belief of the person that God would help him. So, as an exploratory goal, we suggest the introduction of the term *religious response expectancies* (RRE). We aim to evaluate the prediction effect of RRE on non-volitional

responses and compare it with the prediction effect that RE has on them. Also, we would like to point out that it is the first time, to our knowledge, that the BriefRCOPE instrument is translated into the Romanian language and it is applied on a sample of Romanian people.

The hypotheses of our investigation are the following:

1. The response expectancies that the patient has regarding the level of distress she will feel after the radiotherapy session will mediate the relation between religious coping and the level of distress felt by the patient after the session.

2. The response expectancies that the patient has regarding the level of fatigue she will feel after the radiotherapy session will mediate the relation between religious coping and the level of fatigue felt by the patient after the session.

3. The response expectancies that the patient has regarding the level of weakness she will feel after the radiotherapy session will mediate the relation between religious coping and the level of weakness felt by the patient after the session

Method

Participants

This study was made on a Romanian sample of 38 women diagnosed with breast cancer, which were under treatment with radiotherapy sessions at the Oncology Clinic at the Municipal Hospital of Cluj-Napoca. The patients were recruited during a two months' period, between 1 July and 1 September 2013. The selection criteria were the ability to understand the Romanian language and the ability to understand the questions and respond to them. The third criterion was their believing in God. Only the persons who answered that they believe in God were included in the study. All the participants filled in a standard consent form to participate into the study. All of the participants were given psychological assistance throughout the study. The patients were in different stages of treatment ranging from the first week to the last (fifth). The age of the participants was between 24 and 74 years old, with a mean age of 51.6, median 51. The educational level was divided into four categories: no studies - 1 participant (2.6%), middle school - 6 participants (15.8%), high school - 19 participants (50%), higher education - 12 participants (31.6%). The distribution based on religious orientation was: 33 Orthodox Christians (86.8%), 2 Protestant (5.2%), 1 Catholic (2.6%); 1 Neoprotestant (2.6%); 1 "still searching" (2.6%). Their ethnicity was: 36 Romanians (94.7%), 2 Hungarians (5.3%). Ten of them were living in rural (26.3%) areas and 28 of them were living in the urban area (73.7%).

Instruments and measures.

BriefRCOPE¹² was used to evaluate Religious Coping (RC). It is a

questionnaire that contains 14 items, with two subscales: positive religious coping (PRC) 7 items and negative religious coping (NRC) 7 items. To our knowledge, this scale hadn't been standardized or used on a Romanian sample before, so we made some pilot analysis about the internal consistency coefficients (Alpha Crombach), which turned out to be consistent with those obtained on American Sample. The scale was translated into Romanian. Later it was reconverted into English by three persons. The translation differences were corrected by the group, and we obtained the final translation that we used. To eliminate the anchoring effect, the items were randomized. Individuals indicated how they felt on a 4 point linker scale ranging from 0 (not at all) to 3 (a great deal), as the authors of the scale indicated. The alpha coefficient for the PRC was $\alpha=0.83$, and for the NRC it was $\alpha=0.85$.

VAS (Visual Analog Scale) was used to record Response Expectancies (RE). This is an instrument in which the participant indicates with an X mark, on a 10 cm line, the level of the symptom which is asked for. The ends of the line are anchored by the word 0 (not at all), 100 (maximum level). The scale was used in this field of study to evaluate the expectancies²¹, and also in studies that imply the evaluation of chronic pain or post operatory pain felt by patients.²⁵ We created questions regarding RE on three dimensions: distress, fatigue and weakness. We operationalized distress by "emotionally affected", as a consequence of the following rationale. The patients were around the age of 50 (an average that we have expected), were Romanians, so they were not English speaker natives, hence they could have not been familiar with the concept of distress. To prevent the misunderstandings and the loss of response validity, we created the above mentioned construct, which in our opinion is a nominator of distress concept, and which patients understood we were looking for them to answer.

We created three sets of response expectancies, as follows: (1) a non-religious one: "How muchdo you expect to feel right after the intervention?", with the three dimensions which were put in the dotted area: "emotionally affected"/"fatigue"/"weakness"; (2) two types of religious response expectancies: (a) RREG (VASRG scale) type: "How much do you expect God to help you feel less right after the intervention?" and (b) RREF (VASRF scale) type: "How much do you expect that your faith in God will help you feel less right after the intervention?", both of them with the three dimensions to be put in the dotted area: "emotionally affected"/"fatigue"/"weakness". The questions for religious expectancies were mixed on the scale. We used two types of questions in an exploratory purpose so as to eliminate a possible effect of response desirability, with the first type of questions, and to underline the dimension "faith", with the second one. The intervention meant radiotherapy session.

We also used the VAS scale (VAS symptoms) to evaluate symptoms, for every one of the three dimensions "distress (emotionally

affected)"/"fatigue"/"weakness". After the therapy session the patients were given a VAS symptom scale which contained the question "How much do you feel now?" with the three dimensions mentioned earlier filled in the blanks.

POMS SV (Profile of Mood States, Short Version) questionnaire²⁶ was used. This scale has a Romanian translation and has a great history in studies made on the Romanian population.^{27,28} It has 47 items that form 6 subscales. The time needed for administration is 10 minutes and it requires middle school academic skills. The short version of POMS was validated using patients who suffered from breast cancer. For this reason, we consider it adequate for application on the subjects in our study. We used it to assess the patients' distress/fatigue/weakness. We operationalized the distress dimension by the scores obtained individually from the subscales of anxiety, depression, distress and total distress. Fatigue was operationalized by the scores obtained from the fatigue and confusion subscales. Weakness was operationalized by the scores obtained from the fatigue and confusion subscales.

SCSRFQ (Santa Clara Strength of Religious Faith Questionnaire)⁶ was used to assess religion. This scale contains 10 items which measure the intensity of religious faith. The Alpha Cronbach obtained for the items was $\alpha=0.94$. The score mean was $m=3.2$. To our knowledge this questionnaire wasn't standardized on Romanian population, but was already translated and used in other studies on Romanian samples.

We also registered the demographic data. The patients were asked for their age, ethnicity, level of studies, the area they came from, their diagnostic, their spirituality and their religion. They also filled out a standard consent form, for entering the study.

Procedure

The study was conducted along four meetings. On the first day (T1) the patients were told about the study and after they passed the selection criteria and gave their agreement, they were given the demographic questionnaire, SCSRFQ, BriefRCOPE and POMS-SV. The following day (T2), was the *second meeting*, held approximately 30 minutes before the radiotherapy session. The participants were given the VAS and VASRG +VASRF. After the session, when the *third meeting* took place, they were given the VAS symptoms scale. The *fourth meeting* took place a week after (T3), when the patients were given the POMS-SV and VAS symptoms scales, to record their evolution of symptoms. Of the sample of 38 patients only 23 completed the T3 questionnaires.

Data Analysis

Mediation analysis and the bootstrapping procedure for assessing indirect effects were used.²⁹ We also used correlation and regression analysis for our data.

Results

For mediation analysis we used bootstrapping tests with 5000 re-samples and reported a bias corrected and accelerated confidence interval.²⁹ Mediation is considered present when the confidence interval for the estimation of the indirect effect does not contain 0. This type of analysis was in concordance with other studies made on response expectancies.³⁰

We found the mediation effect of response expectancies (RE) in the relation of negative religious coping (NRC) and distress as follows: 1. Response expectancies (RE) act as mediator in the relation *NRC-distress* (recorded by VAS symptoms) (N=38), with an indirect effect (Ie) of 0.8. Ie=0.8, significant at $p<0.05$, the confidence interval for indirect effect is CI = [0.08; 2.44], and Ie is 47% of Total effect (Te), Te $p<0.01$ 2. Response expectancies act as mediator in the relation *NRC-distress* (POMS-SV (T1), anxiety), (N=37), with a significant indirect effect of Ie=0.2, $p<0.05$, the confidence interval for indirect effect is CI= [0.05; 0.55], and the Ie is 47% of the Te, Te $p<0.01$. 3. Response expectancies act as mediator in the relation *NRC-distress* (POMS-SV (T1), depression), (N=36), with an indirect effect of Ie= 0.35, but significant only at $p<0.09$, confidence interval for indirect effect is CI= [0.036; 1.096], in which case Ie is 29% of the Te, Te is significant at $p<0.001$. 4. Response expectancies act also as a mediator in the relation *NRC-distress* (POMS-SV (T1), distress), (N=36), where the indirect effect is Ie= 0.9, significant at $p<0.05$, with confidence interval for indirect effect CI= [0.18; 2.71], and Ie is 39% of Te, where total effect is significant at Te $p<0.01$. 5. Response expectancies act as mediator in the relation *NRC-distress* (POMS-SV (T1), total distress), (N=36), where indirect effect is Ie=1.1, significant at $p<0.05$, with confidence interval for indirect effect of CI= [0.23; 2.82], indirect effect is Ie=37% Te, Te is significant at $p<0.001$.

For the fatigue dimension we found that ER is a mediator in the relation 1. *NRC-fatigue* (POMS-SV (T1), fatigue), (N=37), where indirect effect is Ie=0.2, significant at $p<0.05$, the confidence interval for indirect effect is CI= [0.03; 0.33], Ie=84% Te, but the total effect Te is statistically significant only at $p<0.08$.

The results also indicated that ER is a mediator in the relation 1. *NRC-weakness* (POMS-SV (T1), confusion), (N=36) where indirect effect is Ie=0.2, significant $p<0.05$, confidence interval for indirect effect is CI= [0.0008; 0.4315], and indirect effect Ie is 41% of Te, and total effect Te is significant at $p<0.01$.

We haven't found any mediation in either one of the relations in which positive religious coping was present.

We analyzed the predictive value of RE compared to RRE for the outcomes of distress, fatigue and weakness, measured by the VAS

symptom scale. We also made hierarchical regression analysis for the three types of response expectancies we used: RE (non-religious response expectancy), RREF and RRED (the two types of religious response expectancies). We recorded the R^2 and the regression coefficient (rc) values for every combination of the three types of expectancies, with the following significant results: 1. For distress the best expectancy that explains the outcome is RE, with an $R^2=0.41$ and $p<0.000$ significance. When we added RREG, we obtained a significant $R^2=0.487$ for the two variables (RE+RREG), with a significance of $p<0.03$ compared to the one of RE alone. The significance of the RE+RREG block was $p<0.000$. Regarding the predictive value, the rc for the RE when tested alone was 0.475 with a $p<0.000$, and when the RREG was added to the model, the rc for the RE was 0.429 with $p<0.000$ and for RREG was -0.183 with $p<0.030$. 2. For fatigue outcome, the only significant predictor was RREF, with an $R^2=0.22$ and $p<0.003$. The rc for RREF was -0.398 with $p<0.003$. 3. For weakness, the best predictor was RREF with an $R^2=0.25$, $p<0.001$ and when we added RE to the model, we obtained $R^2=0.34$ with a significance of $p<0.042$ between this and the RREF alone. The significance of RREF+RE block was $p<0.001$. The rc for the RREF alone was -0.421 with $p<0.001$ and when we added the RE to the model the rc for RREF was -0.382, $p<0.002$ and for the RE was 0.356, $p<0.042$.

Several analysis were performed for BriefRCOPE and its subscales. The mean of the total scale was 1.6. The mean for PRC was 2.3 and for NRC was 0.9. As shown in Table 1, we calculated the Pearson correlation for PRC and NRC and distress (anxiety, depression, distress, total distress), fatigue and confusion recorded by POMS-SV at T1. We got as follows: for the relation NRC - anxiety (N=37 subjects), the Pearson correlation coefficient is $r=0.42$, significant at $p<0.01$; for the relation NRC-depression (N=36), the Pearson correlation is $r=0.51$, significant at $p<0.01$; for the relation NRC-confusion (N=36), the coefficient is $r=0.55$, significant at $p<0.01$; for the relation NRC-distress (N=36), the correlation is $r=0.47$, significant at $p<0.01$; and for the relation NRC-total distress (N=36), we got the correlation coefficient of $r=0.51$, significant at $p<0.01$. We haven't found significant correlations between PRC and either one of the POMS-SV (T1) subscales.

As the results show in Table 2., for PRC and NRC and distress (anxiety, depression, distress, total distress), fatigue and confusion recorded by POMS-SV at T3 (after a week), we got the following Pearson coefficients: for the relation NRC- anxiety (N=23), the Pearson correlation is $r=0.51$, significant $p<0.05$; for the relation NRC- depression (N=23), the coefficient is $r=0.61$, $p<0.01$; for the relation NRC-distress (N=23), the coefficient is $r=0.58$, significant at $p<0.01$; and for the relation NRC-total distress (N=23), the correlation is $r=0.6$, $p<0.01$. We haven't found significant correlations between PRC and either one of the POMS-SV (T3) subscales.

Table 1. Pearson Correlation between Religious Coping Styles and religiosity measured by SCSRFQ and anxiety, depression, fury, fatigue, confusion, distress and total distress measured by POMS-SV at T1.

(N) represents the number of subjects considered in each analysis.

Correlations		T1 SCSRFQ	T1(POMS-SV)							
		religiosity	anxiety	depr.	fury	fatigue	confusion	vigor	distress	T. distress
PRC	r-Pearson	.696 ^{***}	.062	.078	.033	.079	-.023	-.140	.061	.092
	N	38	37	36	37	37	36	36	36	36
NRC	r-Pearson	-.056	.424 ^{***}	.509 ^{***}	.304	.290	.500 ^{***}	-.287	.472 ^{***}	.508 ^{***}
	N	38	37	36	37	37	36	36	36	36

***. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2. Pearson Correlation between Religious Coping Styles and anxiety, depression, fury, fatigue, confusion, distress and total distress measured by POMS-SV at T1.

(N) represents the number of subjects considered in each analysis.

Correlations		T3 (POMS-SV)							
		anxiety	depr.	fury	fatigue	confusion	vigor	distress	T. distress
PRC	r-Pearson	.273	.261	.264	.246	.146	-.267	.262	.297
	N	23	23	23	23	23	23	23	23
NRC	r-Pearson	.512*	.610 ^{***}	.457*	.338	.628 ^{***}	-.313	.575 ^{***}	.600 ^{***}
	N	23	23	23	23	23	23	23	23

***. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Pearson Correlation between Religious Coping Styles distress fatigue and weakness measured by VAS-Symptoms at T3.

Correlations		VAS-S		
		distress	fatigue	weakness
PRC	r-Pearson	-.097	-.098	-.168
	N	38	38	38
NRC	r-Pearson	.455 ^{**}	.409*	.456 ^{**}
	N	38	38	38

***. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

For PRC and NRC and distress, fatigue and weakness, measured by VAS symptoms, we got the following correlations, represented in Table 3:

for the relation NRC-distress (N=38), the correlation coefficient is $r=0.46$, $p<0.01$; for the relation NRC-fatigue (N=38), the correlation coefficient is $r=0.41$, $p<0.05$; and for the relation NRC-weakness (N=38), the correlation coefficient is $r=0.46$, $p<0.01$. We haven't found any significant correlations between PRC and either one of the three dimensions measured by VAS symptoms.

We found a significant positive correlation of PRC in the relation PRC - religion (SCRFAQ) with the correlation coefficient of $r=0.7$, significant at $p<0.001$ (N=38.). We haven't recorded a significant correlation between NRC and SCRFAQ.

Discussions

As we expected we obtained mediation of response expectancies in all of the three models of relation between religious coping and distress/fatigue/weakness. These mediation effects were partial and were registered only in the relations that contained negative religious coping. The best sustained mediation effect was the one for distress, which was identified in four out of five relations which contained the distress dimension (in which distress was recorded by different subscales or scales). No significant mediation effect of RE between PRC and its outcomes were registered. In conclusion we can state that our hypotheses were partially confirmed.

The association between NRC and distress, in spite of a missing one between PRC and distress, confirms the results found by Ai et. al.¹³ Thus, we registered a significant correlation between PRC and level of religion. The explanation found by these authors is that negative religious coping, opposite to the positive one, may contain trait and state components like maladaptive coping and crisis specific struggle.

The present study is the first, to our knowledge, which points out the presence of response expectancies in the mechanism of religious coping, and which shows that response expectancies mediate the relation between negative religious coping and negative outcomes the patients suffering from cancer experience. Even though we are far from concluding in a decisive way, these results show that response expectancies could play an important role in the mechanism of religious coping, as they play a role in the Placebo effect. We underline that *non*-religious response expectancies (RE) produced the mediation effect, expectancies which did not contain any reference to God or religious faith. Surprisingly, religious response expectancies (RRE), which referred directly to God help, did not account any mediation effect. One of the possible explanations of this result is that the patients responded in a maximum manner to the RRE questions, without making an honest introspective analysis of their faith and trust in God help, with the desire of self-confirming that they are religious and they believe in God. Speaking from point of view of religion, we can

speculate a pharisaic phenomenon which could be very interesting to study on people who assume they are Christians and believe in God. The concept of “faith” might need a more precise conceptualization and internalizing of this conceptualization among the Christian population. Our interpretations are made only at a speculative level, as the present study is too small to assume such implications. Returning to the point of view of science, the results of this research suggest that religion could have a mechanism similar to the Placebo effect.

As for the BriefRCOPE applied on a Romanian sample, with the majority being Christian Orthodox, our results confirm the validity of this scale. Significant correlations were found between negative religious coping and the level of distress, anxiety and depression. The correlation with these outcomes was significant even when they were recorded after a week.

The prediction effect of religious response expectancies (RRE) is comparative with the one of non-religious response expectancies (RE), regarding the non-volitional responses recorded with VAS symptoms. In two of the three outcomes (fatigue and weakness), RRE predicted more of the response variance than RE did. Also, RRE prediction effects were significant in all three types of outcomes. In two of these cases (distress and weakness), the cumulated prediction effect of RRE and RE was significantly higher than each of them alone. However RE explained more of the variance of distress responses when it was recorded with POMS-SV subscales, but the RRE effect of prediction on these outcomes was insignificant. These results allow us to support our innovation regarding the concept of religious response expectancies (RRE). We suggest using this variable RRE together with RE when assessing the predictive value of response expectancies on non-volitional outcomes in the case of religious people.

Conclusions and Implications

Our main finding is the presence of response expectancies as a mediator of religious coping and distress outcomes. In other words, even though religious coping registers effects on people’s well-being, these effects could be influenced by their expectancies of the outcomes and their expectancies that God will help them. So, the outcomes could be predicted by their faith and not entirely by their religious coping practice. This is important information for therapists who treat persons to whom religion and religious practices are important aspects of their life. Those people can be taught to emphasize their religious response expectancies and pay a lot more attention to their degree of spiritual believing, not only on religious coping rituals as being expressed by the observed behaviors. Spiritual insights and faith could be more important to determine better health and well-being outcomes than religious coping rituals per se. As

Opre A. explains it in his work, for a therapy to be successful, there are four steps that have to be achieved: 1. the patient has to be aware and conscious of his illness. 2. He must have faith in the therapy content and process. 3. There has to be a good therapist. 3. The patient must follow a systematic practice of the assignments he receives in therapy.³¹ So we can understand very well the importance of faith in therapy process. The psychological therapy is not a miracle pill that is given to the patient and does all the work for the patient, instead of the patient. The therapy is a process that involves the full implication of the patient in his healing. The therapy enables the patients to begin the process of healing himself³¹, of course assisted by the therapist and with the help of the information the patient is provided by the therapist. This cannot be done without the faith of the patient, that what he does is good for him. As regarding the religious coping, it's a similar thing. Is important that you have faith in the actions of the religious coping, and as a consequence that faith has a great impact on the outcomes. Religious works teach the same idea. Opre A in his work cites an orthodox preacher Hierotheos Vlachos, which explains the four steps of healing the mind: 1. to become aware of your ill (the sin), 2. To have real faith, 3. To have a good preacher who assists you, 4. To assess the work and practices of healing your mind³¹. We can see very clear that these steps are almost identical, in number and content, as in the case for the success in psychological therapy. So implications for therapy of our findings, regarding the importance of religious faith, especially with religious people, are obvious

In our study we showed that the prediction effect of religious expectancies in some cases is similar to the one made by non-religious expectancies, or even greater, so working on religious expectancies could lead to similar and sometimes better outcomes for the patient, than in the case of non-religious ones. So this could lead to the conclusion that developing positive religious response expectancies can be regarded as a serious objective in therapy sessions or before medical interventions, as it is in the case of non-religious response expectancies.

Another aspect RE vs. RRE is the way they could be changed. It is well known that response expectancies work in an automatic way and non-volitional response appears in conformity with the expectancies. As the author Irving Kirsch says, response expectancies are acquired by classical conditioning, verbal persuasion, modeling and self-observation³² but sometimes it is not very easy to change them. For example you cannot just tell someone "don't expect to feel pain" and expect the outcome for that person to be "less pain". The person needs a deeper processing of the new expectancy. That's why the procedure to change them is hypnosis.^{33, 34, 23} It is known that hypnotic procedures don't work with all the patients. So for the subjects that don't respond to hypnosis and are religious, the therapists could try focusing on religious discussions and try to change their religious expectancies. In our opinion, religious response

expectancies (RRE) could be emphasized or even changed just by discussion, without hypnotic procedure. Religion is well embedded in the person's system of values, of course for the one that is religious. So discussion about strengthening their faith and religious expectancies could be made by the therapist much more easily and faster than a session of hypnosis.

Another important finding of our study is the significant correlations of BriefRCOPE subscales with distress outcomes on a Romanian sample. To our knowledge, BriefRCOPE is not yet validated on the Romanian population, but our results should encourage such a study.

Limits and research

We are fully aware that this study is made on a small sample. Therefore these results could be used more as an idea of a new field of research in the psychology of religion, namely the mediation effect of response expectancies (RE) in the relation between religious coping and different from its positive or negative effects. Also, the limited number of non-volitional responses measured gives a narrow image upon the influence response expectancies could play in the mechanisms of religious coping. However, in the light of a pilot investigation, we consider that our results are very encouraging and we support the necessity of more studies on this phenomenon. Besides the need for studying this phenomenon on a larger scale, a new direction of research could be the study of both hopes and response expectancies as mediators in the same design. David et. al.²¹ suggested that individuals can differentiate between hopes and response expectancies regarding the evaluation of appearance of the expected outcome. Hence, taking the fact that Ai et. al.¹³ recorded that hopes can be a mediator in the relation of religious coping and distress, this new research line is sustainable.

In conclusion, our results suggested that religious coping could act like a placebo, the appearance of its effects being mediated by response expectancies. Taking this into consideration, from a scientific point of view, the mechanisms of religious coping are partially explained. Looking from a theological perspective, our study didn't deny the presence of God. As we mentioned above, the psychological mechanisms of religious coping can work even if God as an entity is present. And much more, this study can in fact be seen as an actual proof that religious coping and faith really work. Like Jesus said to the blind man: "Your faith has healed you".³⁵

Notes

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