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## DERMATOLOGY | RESEARCH ARTICLE

# The influence of religious/spiritual exercises on well-being and quality of life in dermatological patients: A quasi-experimental study

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**Abstract:** Interventional studies in the recent past have shown that an individual's religious-spiritual (R/S) well-being helps in coping with chronic disease.

In this quasi-experimental study, we performed two different interventions in 24 patients with systemic sclerosis, lupus erythematosus, and melanoma. One group of patients performed R/S exercises or attended a disease-specific lecture, and were compared to another group of patients who underwent no intervention.

The R/S exercises produced a significant increase in Hope Transcendent (0.001) with the Multidimensional Inventory of Religious/Spiritual Well-Being compared to the lecture. Quality of life (QoL) improved significantly, specifically for the Mental Component Score of the Medical Outcomes Study 36-Item Short Form Health Survey, after the R/S exercises ( $p = 0.033$ ) as well as the lecture ( $p = 0.011$ ).

This pilot study provided interesting insights on the impact of spiritual exercises in regard to Hope Transcendent, which was uniquely associated with the intervention. The study provided empirical evidence of the importance of the intervention, which would be valuable for the management of specific diseases in the clinical

### ABOUT THE AUTHOR

The activities of our research group have been focused on religiosity/spirituality (R/S) in patients with skin diseases. The investigations were performed at the Department of Dermatology, Medical University Graz, Austria, where the principal author of this report (EA) has been treating patients with autoimmune diseases for over 30 years. We analyzed religious/spiritual well-being (RSWB) using the MI-RSWB questionnaire, which was developed by the senior author (HFU) and coworkers. The MI-RSWB has been translated and validated into several languages. HFU serves as scientific director at the Center for Integrative Addiction Research (CIAR), Grüner Kreis Society, Vienna. He has expertise in psychology, religious studies, and psychoanalysis. In previous investigations, we studied parameters such as disease burden, disease acceptance, QoL, mood pathology, and RSWB being reduced in dermatologic patients. In the current publication, we report on a newly developed R/S intervention which led to a significant increase of transcendent hope.

### PUBLIC INTEREST STATEMENT

As shown in recent work, religiosity/spirituality (R/S) plays an important role in disease because patients with increased R/S reported higher QoL and were able to cope better with their disease. R/S comprises several dimensions such as sense for meaning, forgiveness, hope for a better future and/or a better afterlife, or connectedness. These have been recognized as being most important at the end of life, but also in dealing with chronic disease. These basic needs of human beings have not been given sufficient attention in medicine. Especially, hope was found to be a central force in terms of supporting a person's recovery from disease and facilitating his/her ability to cope with disease. Our study focused on the dimensions of R/S that were modified after a spiritual training program focused on improving the patients' ability to mindfully experience facets of everyday life, personally and in relationships with other individuals, the environment, as well as a higher power leading to significant increase of transcendent hope.

setting. This dimension of spirituality may help to overcome anxiety and fear of the inevitability of death while enabling patients to cope with chronic disease.

**Subjects:** Health and Social Care; Health Conditions; Chronic Diseases; Dermatology; Cutaneous Oncology

**Keywords:** religion and spirituality; spiritual health; well-being; hope; transcendental; dermatologic patients; interventions; mental health; coping; chronic disease

### 1. Introduction

Although spirituality has been acknowledged as an important issue, its role in achieving better well-being and quality of life (QoL) in skin disease is poorly investigated (WHOQOL, 1994). Religious and spiritual (R/S) issues have not yet been investigated in these patients.

Spirituality has many dimensions, which may be interpreted differently. Spirituality is also defined very diversely (Koenig, King, & Carson, 2012; Peng-Keller, 2014). Whereas religiosity has been associated with institutions and traditions, spirituality comprises a wide dimension without denominational allegiance, and was shown to counteract hopelessness and despair (Peng-Keller, 2014).

Spirituality has cognitive, experiential, and behavioral aspects (Anandarajah & Hight, 2001). Experiential and emotional aspects include feelings of hope, love, and connection, reflected by the ability to give and receive spiritual love and experience various types of relationships in connections with self, community, environment, nature, and the transcendental. Davis et al. proposed five potential dimensions of spirituality: transcendent spirituality, theistic spirituality, self, nature, and humanity (Davis et al., 2015).

Religiosity and spirituality have been studied on the basis of empirical models. Various psychometric measures have been developed to assess religiosity and/or spirituality (R/S). One of these is the standardized *Multidimensional Inventory of Religious/Spiritual Well-Being (MI-RSWB)*; Unterrainer et al., 2013). Using this questionnaire, we investigated 149 patients with lupus

**Figure 1.** Hands of a patient with systemic sclerosis.



erythematosus (LE) and systemic sclerosis (SSc) (Figure 1), both of which are systemic chronic diseases, and patients with malignant melanoma stage I-II (M) (Pilch et al., 2016). These patients had undergone surgical resection of melanoma in the recent past and had no metastasis. LE and SSc, with the exception of cutaneous LE, are chronic diseases with systemic organ involvement. The involvement of the face has a high impact on QoL, leading to stigmatization and a sense of shame (Pilch et al., 2016). Melanoma is a potentially fatal disease causing psychological impairment, and may be accompanied by reduced QoL (Cornish, Holterhues, Van De Poll-Franse, Coebergh, & Nijsten, 2009). Anxiety and uncertainty about the course of disease also influenced QoL, morbidity, and potential early death.

Recently the National Institute of Health emphasized the fact that spirituality and mindful living are very important tools for reducing stress and improving QoL (Goldenberg & Jacob, 2015). Higher religious/spiritual well-being (RSWB) was significantly associated with mental health measured by Medical Outcomes Study 36-Item Short Form Health Survey (SF-36) (Unterrainer et al., 2016a) and lower depression rates (BSI-18) (Unterrainer et al., 2016b). We found a significantly reduced R/S well-being to be associated with a reduced sense of meaning compared to standard values in the Austrian population, as well as a lower QoL (Pilch et al., 2016; Unterrainer et al., 2016a). The scores for RSWB were different in the three patient groups. Interestingly, melanoma patients showed significantly higher values for transcendental hope. Lectures about disease and psychological assistance were reported as the most important needs of patients.

Our hypothesis was that interventions such as spiritual exercises might result in greater RSWB and rises in the various immanent and transcendent subscales of the MI-RSWB questionnaire. This would have an impact on QoL.

A small number of studies have been focused on the outcome of spiritual interventions in medicine. Patients with a high level of spirituality are able to better manage their lives, especially in the final stage (Vespa, Jacobsen, Spazzafumo, & Balducci, 2011). In a Cochrane analysis, the effects of spiritual and religious interventions were studied in a terminal phase of life (Candy et al., 2012). The investigation did not provide conclusive evidence of better well-being after these interventions; it should be noted that the quality of the studies differed markedly.

Interventions such as psychoeducation and psychotherapy were shown to exert a positive effect in patients with LE and melanoma. In 34 patients with LE, Haupt et al. (2005) performed group sessions focused on information about the disease and specific disease-related problems, combined with psychoeducative and psychotherapeutic elements. Coping abilities, depression, anxiety, and the overall mental burden improved significantly over a 6-month period (Haupt et al., 2005). In another study, psychoeducation resulted in a significant improvement of intrafamilial communication and self-esteem, and reduced fatigue (Karlson et al., 2004). Psychosocial group therapy produced a significant enhancement of self-esteem and psychosocial skills in SLE patients from Hong Kong (Ng & Chan, 2007). Psychoeducative group training reduced helplessness and led to greater acceptance of impairment due to SSc without changing moods and physical function (Kwakkenbos et al., 2011).

Similar results were achieved in a randomized study involving 262 patients with primary malignant melanoma who received psychoeducation (Boesen et al., 2005). After this intervention, patients used significantly more active coping strategies than did the control group. However, the effect was short-lived and the clinical relevance not obvious (Boesen et al., 2005).

R/S interventions performed specifically on persons afflicted with skin disease have not been reported yet. The aim of the present study was to determine whether exercises involving R/S issues might improve a patient's well-being and QoL compared to an attention placebo in the form of a lecture; these patients were compared to a control group with no intervention. Our hypothesis was that spiritual exercises might influence the patients' scores on the different immanent and transcendent subscales investigated by the MI-RSWB questionnaire, especially immanent and transcendent

hope. This might have an impact on QoL in these patients, because a high rate of morbidity has been noted in patients with chronic autoimmune disease as well as melanoma patients with metastases.

## 2. Methods

### 2.1. Patients

Of 149 previously analyzed patients (Pilch et al., 2016; Unterrainer et al., 2016a, 2016b), 24 consented to participate in a prospective quasi-experimental pilot study (SSc  $n = 6$ , LE  $n = 10$ , M  $n = 8$ ), which was approved by the ethics committee of the Medical University of Graz, Austria (25–280 ex12/13). Initially, the investigation was planned as a randomized study in 149 patients. We also intended to compare spiritual intervention with music therapy. However, at the initial inquiry, just a small number of patients agreed to undergo an intervention. Since the final number of patients who consented was a mere 17, we decided to perform the spiritual intervention alone. Patients were recruited at clinical follow-up visits and invited in writing by the study physician. Control patients were recruited at follow-up visits.

Based on their personal preference, 10 patients (median 53 years, range 29–78 years, 9 women, 8 Roman Catholic, 2 without denomination) participated in the R/S exercises. Seven patients (median age 55 years, range 45–67 years, 4 women, 4 Roman Catholic, 1 Protestant, 2 without denomination) attended a 90-min lecture, a discussion, and two telephone interviews over a period of 8 weeks. Seven patients (median age 58 years, range 35–74 years, four women, all Roman Catholic) received no intervention.

### 2.2. Interventions

#### 2.2.1. Exercises in Ignatian spirituality

Ignatian spirituality is described as spirituality for everyday life (Lambert, 2010; Lefrank, 2009; Plattig, 2000). It insists that God is present in our world and active in our lives. It is a pathway to deeper prayer, good decisions guided by keen discernment, and an active life of service to others. The principle is being on the way, to grow and learn to manage stress and differences. It is a spirituality of being thankful. The key insight of Ignatius Loyola is that we can find God in all things, that the human being is loved by God and redeemed by Jesus Christ.

The spiritual intervention was performed over a period of 6–10 months after the initial inquiry. The intervention was conducted on an ecumenical basis by a Christian theologian specialized in spiritual guidance, once a week for 90 min, over a period of 8 weeks. The purpose of the exercises was to improve the patients' ability to mindfully experience facets of everyday life, personally and in relationships with other individuals, the environment, as well as a higher power (Weinstein et al., 2014). The following therapeutic techniques were applied: meditation, rituals, exchange of experience, stories, and impulses in respect of the depth dimension of the spirituality of Ignatius (Aberer et al., 2018; <http://www.jesuiten.at/index.php?id=422>, <https://www.ignatianspirituality.com/>). Patients were educated (trained) to perceive personal processes of their life and were accepted regardless of their specific R/S attitudes. They were at liberty to accept the contents of the exercises or not. Repeated group meetings were offered, but the patients did not continue to attend or undergo these interventions.

#### 2.2.2. Lecture

Patients who were unacquainted with each other were given an appointment for a lecture at the dermatology department 8–12 months after the first inquiry. Three doctors, all specialists for one of the three diseases, delivered a slide (PowerPoint) presentation about the disease in parallel sessions for 90 min. Patients could then ask questions for 30 min. Over a period of 2 months, they were called by the study physician and interviewed twice. The doctor asked six standardized questions relating to their disease. After the second interview, the patients were asked to fill the questionnaires and send them to the study doctor.

### 2.3. Questionnaires

All patients filled two questionnaires at two time points: At the time of recruitment and after each of the two interventions. Controls submitted the questionnaires at their last control visit over a period of 1 year.

The *MI-RSWB*, a validated instrument, measures RSWB, which is a subjective phenomenon consisting of equal measures of Existential Well-being for the immanent area of perception, and Religious Well-Being for the transcendent areas with different subscales (Unterrainer & Fink, 2013). QoL was assessed by means of the SF-36 (Morfeld et. al., 1998). Eight subdimensions were summarized into two standardized global scores: the Physical Component Score and the Mental Component Score of QoL.

### 2.4. Statistics

Data are presented as medians and interquartile ranges for continuous data, and absolute and relative frequencies for categorical data. Categorical baseline characteristics were compared using chi-square test or Fisher's exact test, and continuous variables using the Kruskal-Wallis *H* test. To analyze the impact of the interventions, we calculated the individual change from the first to the second assessment. The change scores were compared using the Kruskal-Wallis *H* test.

### 3. Results

Most significantly, the R/S exercises resulted in a marked increase in Hope Transcendent compared to both other groups, namely the lecture ( $p = 0.001$ ) and the control group ( $p = 0.033$ ) (Table 1). Additionally, QoL improved on the Mental Component Score after both R/S exercises ( $p = 0.033$ ) and the lecture ( $p = 0.011$ ). An improvement of physical role functioning and mental health measured by the SF-36 was achieved after the R/S exercises as well as the lecture compared to the control group (data not shown in tables).

The three groups did not differ significantly in terms of social-anamnestic and psychometric parameters at the first time point of measurement. Patients with R/S exercises reported group experiences compared to patients who attended the lectures and controls; details have been published elsewhere (Aberer et al., 2018).

### 4. Discussion

These preliminary findings point to the fact that the R/S intervention appeared to have specifically addressed Hope Transcendent and implied greater trust in the transcendent realm of perception. This may have a strong impact on the patients' ability to cope adequately with morbidity.

Spirituality is an important factor in maintaining health and well-being and coping with illness, and has been identified as a key element in hope (O'Neill & Kenny, 1998). This is in conformity with the published literature, in which several facets of hope were reported as being related with greater psychological well-being (Eaves, Ritenbaugh, Nichter, Hopkins, & Sherman, 2014). However, hope might be just one cornerstone of the large spectrum of spirituality (Unterrainer et al., 2016b; Eaves et al., 2014).

Patients with potentially lethal diseases are confronted with the inevitability of death. Jonas et al. hypothesize that, in the majority of religions, transcendental beliefs play a protective role in dealing with the terror of death (Jonas & Fischer, 2006). On the other hand, hope is exerting a multifaceted and dynamic influence on the patients' expectations in relation to treatment and course of disease (Eaves et al., 2014). Resources for hope are both internal and external (Duggleby et al., 2012). Herth (1993) suggested that older patients and those with chronic disease have perceived a sense of linking within and without the self (with others). There was an inner strength or core that persons with long-term disease reach for to maintain their hope (Herth, 1993).

**Table 1. Group differences in religious/spiritual well-being and quality of life before and after the interventions**

Psychometric parameters	R/S exercises (n = 10)		Lecture (n = 7)		Controls (n = 7)		Overall difference	R/S exercises vs. lecture	R/S exercises vs. controls	Lecture vs. controls
	Pre	Post	Pre	Post	First	Second				
<b>MI-RSWB</b>										
RSWB total score	195 (165/221)	199 (168/224)	200 (173/214)	202 (175/221)	185 (158/193)	188 (161/200)	.794	.740	.887	.456
<i>Existential Well-being</i>										
Hope Immanent	30 (27/43)	30 (24/42)	39 (23/44)	37 (29/41)	33 (29/45)	38 (28/38)	.446	.740	.270	.318
Forgiveness	38 (35/45)	39 (29/48)	40 (29/43)	39 (33/44)	38 (33/43)	38 (35/39)	.861	.536	.962	.902
Experience of sense and meaning	37 (32/38)	36 (32/42)	40 (35/42)	39 (38/41)	36 (33/38)	34 (31/36)	.512	.601	.270	.620
<i>Religious Well-being</i>										
Hope Transcendent	32 (22/36)	37 (30/39)	35 (27/41)	33 (26/41)	32 (25/36)	31 (22/39)	<b>.005</b>	<b>.001</b>	<b>.033</b>	.318
Connectedness	30 (18/37)	27 (18/41)	27 (24/31)	27 (24/32)	21 (15/26)	22 (17/28)	.543	.669	.315	.535
General Religiosity	31 (26/37)	37 (25/37)	25 (16/34)	29 (21/35)	16 (10/41)	19 (17/40)	.561	.417	.364	.805
<b>SF-36</b>										
Physical Component Score	42 (33/49)	32 (26/47)	48 (37/54)	31 (26/54)	45 (24/60)	50 (29/56)	.389	.962	.270	.209
Mental Component Score	40 (35/50)	45 (32/51)	47 (46/57)	53 (36/63)	51 (47/53)	56 (55/57)	<b>.028</b>	.740	<b>.033</b>	<b>.011</b>

Notes: Kruskal-Wallis H test was performed (median and interquartiles at 25% and 75% were calculated); significant differences ( $p \leq .05$ ) are shown in bold. R/S = Religious/Spiritual; MI-RSWB = Multidimensional Inventory of Religious/Spiritual Well-Being; SF-36 = Short Form-36 (quality of life).

In palliative medicine, spirituality addresses hopelessness and life despair at the end of life. Patients with a high level of spirituality are more prone to develop their potentialities and capacities and have more effective mechanisms to cope with stressful situations (Vespa et al., 2011). Furthermore, there is evidence that some terminally ill patients may seek, with varying degrees of openness, a connection with a higher power or God despite having expressed no interest in religion or belief earlier (Collin, 2012). Thus, transcendent hope appears to be a cornerstone of spirituality among other dimensions.

Our patient groups were focused on better well-being and QoL because both patients with autoimmune diseases and those with melanoma had an uncertain course of disease; the latter patients also had a higher mortality rate secondary to melanoma. In a meta-analysis of 14 controlled trials on R/S interventions in patients with cancer (Oh & Kim, 2014), spiritual interventions were compared with a usual care control group or other psychosocial interventions. The study showed that spiritual interventions had a moderate but still significant effect on spiritual well-being, meaning of life, coping with anxiety, and general mental health. In both interventions, the study participants were permitted to exchange experiences and share common problems with others. In our study, patients with R/S exercises had group experiences compared to patients who attended the lecture and controls. The former group experienced a sense of community and connectedness with each other. Patients who attended a lecture wished to meet again for personal exchange although they were informed about their disease (Aberer et al., 2018). This corresponds to recent work, in which 48% of patients wished to attend a disease-related lecture and 35% would welcome the possibility of a group discussion about their disease (Pilch et al., 2016).

Spirituality may be considered a part of a greater mind-body-spirit approach in medicine, focusing on strategies including relaxation, meditation, yoga, and cognitive behavioral therapies (Goldenberg & Jacob, 2015). A mindfulness meditation-based intervention for stress reduction was shown to influence skin clearing rates in patients with psoriasis, which is a chronic skin disease (Kabat-Zinn et al., 1998).

Both of the abovementioned interventions had also a psychoeducative effect, which might have improved the Mental Component Score of QoL. R/S exercises additionally provided self-awareness and an increase in transcendent hope, which enhanced the patients' ability to live with the disease. Phillips et al. studied 10 persons with serious mental illnesses, and addressed religious resources, spiritual struggles, forgiveness, and hope. The patients discussed topics connected with religious resources. Spirituality was recognized as a resource or a burden. The persons appeared to connect with each other and tried to find ways to keep hope alive through rituals such as praying. An environment for sharing and building group cohesion was found to be most important (Phillips, Lakin, & Pargament, 2002).

In 1963 Frankl proposed that finding meaning in life is the core of existence by self-transcendence and connecting with others, sourced in spirituality (Frankl, 1963). Spirituality was described as an underlying dimension of the conscious to find meaning in life, union with the universe and all things that extend to a power beyond us (Rowe & Allen, 2004). Religion is the interindividual relationship with a higher being in connection with others, which is a motivation factor in all areas of life (O'Neill & Kenny, 1998). Aspects of religion such as religious beliefs, practices, and relationships are often used to assist individuals in coping with stressful experiences (Rowe & Allen, 2004). Research on coping has demonstrated spirituality and religion as interchangeable and overlapping concepts. The contents of our spiritual intervention were directed to mindfully experience facets of everyday life, personally and in relationships with other individuals, the environment, as well as a higher power. Irrespective of their religious affiliation (2 of 10 patients had no religious affiliation), our patients still experienced increasing transcendental hope.

## 5. Conclusion

Our study showed that R/S interventions yielded a unique healthcare outcome related to an emerging field in psychological/social/spiritual care. In particular, Hope Transcendent was unique to the R/S exercises, was enhanced significantly after the intervention, and correlated with QoL. Although these data constitute early evidence, hope may be identified as a foundational construct in QoL and well-being. Possibly, the type of R/S exercises, namely the principles of Ignatian spirituality, might have influenced the outcome. While this new dimension of hope achieved by the patients plays a role in reducing anxiety in life or the anxiety of death and is certainly important, it might also encourage patients to live better with a chronic or unforeseeable disease. Given our rather promising yet preliminary findings, it would be desirable to perform randomized controlled trials and devise a standardized form of the R/S exercise program.

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### Ethics approval and consent to participate

The research was approved by the ethics committee of the Medical University of Graz, Austria (25-280 ex12/13). All patients gave their written consent to fill the questionnaires and participate in the interventions.

### Consent for publication

This manuscript contains no personal data in any form. The patient gave permission to be photographed and to publish her image.

### Competing interests

The authors declare that they have no competing interests.

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### Authors' contributions

EA and HFU designed the study, analyzed the data, drafted and reviewed the manuscript. AA analyzed the statistical data and reviewed the manuscript. ML, MP, SS,

and MG-G were involved in data collection. RF-P and NW gave lectures and guided patient discussions. All authors read and approved the final manuscript.

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