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Spirituality and health: their associations and measurement problems

Malinakova, Klára

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General discussion

The general aim of this thesis was to assess the relationships between R/S and different aspects of health using various pathways of the possible influence of R/S on health. Understanding these underlying mechanisms may improve our understanding of the concept of R/S and its meaning for health. A further aim was to explore possible sources of the discrepancies between the findings of various research studies in the area of R/S and health, with a special focus on measurement problems. This approach leads to a focus on measurement problems in the behavioural sciences in general. Finally, this thesis offers two tools for measuring spirituality, an adapted version of a classical spirituality scale and a new tool for measuring implicit attitudes in the area of R/S, which could also be adapted for measuring other attitudes.

This final chapter summarises (8.1) and discusses (8.2) the main findings of this study and discusses its strengths and limitations (8.3). Finally, it discusses implications for practice and future research (8.4).

8.5. Main findings

The main findings are summarized per research question.

Research question 1 (*Chapter 3*):

What are the psychometric properties of the shortened version of the Spiritual Well-Being Scale in Czech adolescents?

The Spiritual Well-Being Scale (SWBS) is one of the most extensively studied measures of subjective and spiritual well-being. We assessed the psychometric characteristics of a shortened 10-item version of the scale in Czech adolescents; we found that the three negatively formulated items of the scale created a separate factor and lowered Cronbach's alpha and the Mean Inter-Item Correlation values. After adjustment, i.e. the exclusion of these negatively-worded items of the scale, our study supports the original two-factorial model of the SWBS with satisfactory internal consistency.

Research question 2 (Chapter 4):

Does an association exist between spirituality and religious attendance (both separately and jointly) and leisure-time choices, specifically screen-based activities and organised leisure time activities, among adolescents in a highly secular environment?

We found that religious attendance and spirituality separately were associated with a lower prevalence of excessive television use. The same held for excessive playing of computer games, where in addition, religious attendance reinforced the protective effect of spirituality. Regarding excessive Internet use, respondents who were either only attending or only spiritual were more likely to use the Internet excessively. However, the combination of attending religious activities and being spiritual was protective with respect to excessive Internet use. We further found that attending respondents, as well as spiritual respondents, were more likely to be involved in at least one activity and tended to have a greater variety of organised leisure-time activities. Participants were also more likely to regularly read books and to play a musical instrument. Spirituality was also associated with higher chances of engaging in sufficient physical activity.

Research question 3 (Chapter 5):

Is there an association of spirituality and religious attendance with adolescent health-risk behaviour in a highly secular environment? Does spirituality modify the association of religious attendance, or does religious attendance mediate that of spirituality?

We found that religious attendance and spirituality were associated with a lower risk of weekly smoking and that spirituality was also associated with a lower risk of weekly drinking. The multiplicative interaction of religious attendance and spirituality was associated with less risky behaviour for four of the five explored health-risk behaviours. Religious attendance was not a significant mediator for the association of spirituality with health-risk behaviour.

Research question 4 (Chapter 6):

Is there an association of religiosity measured more specifically (i.e. as perceived closeness of God and as the stability of religious attitudes) with mental health (i.e. attachment insecurity and other mental health problems) in a secular environment?

We found that various approaches to assessing religiosity, i.e. a different categorisation of respondents based on other related concepts, led to different findings. Unstable non-religious respondents and converts who perceive God as distant were more likely to experience anxiety in close relationships. Furthermore, we found higher risks of worse mental health for unstable non-religious respondents, for converts who perceive God as distant and for stable religious respondents who perceive God as distant.

Research question 5 (Chapter 7):

Could a new method, Emotion Based Approach (EBA) represent a reliable alternative to classical questionnaires with regards to assessment of attitudes? What are the characteristics (structure, psychometric properties) of the two EBA tools that are presented (EBA Spirituality

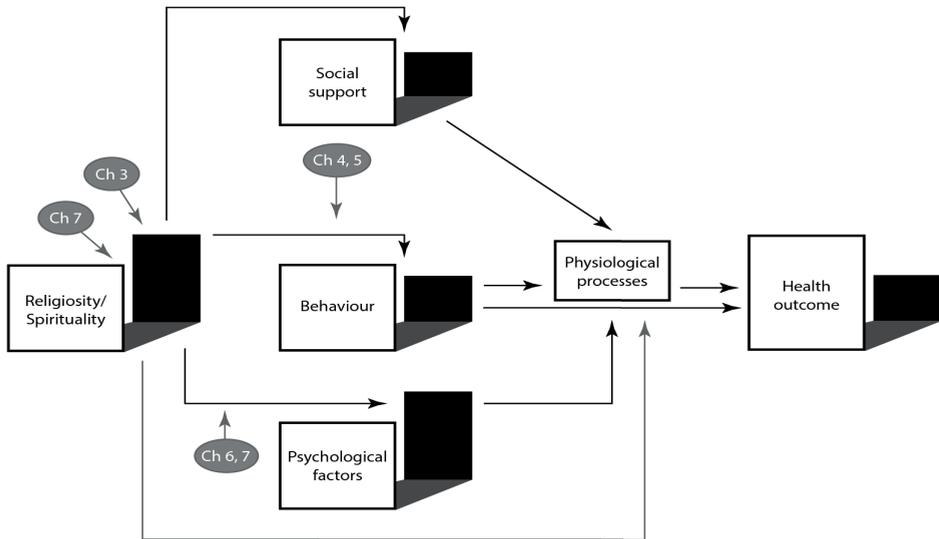
tool and EBA Actual Stress tool)? Do these vary for implicit (i.e., assessment with recording of the selection process) and explicit (i.e., assessment of only the final responses to items) EBA approaches?

We found that the EBA tools have an acceptable (EBA Actual Stress Tool) to good (EBA Spirituality Tool) internal consistency and an acceptable divergent validity and that concrete emotions that the tools use as response categories differ in their test-retest reliability from low reliability for neutral expression to good reliability for joy. The implicit EBA showed a stronger correlation between emotions and a weaker congruent validity, but a higher criterion validity, i.e. as hypothesized stronger correlations with cortisol change and weaker correlations with social desirability scores, than the explicit approach and standard questionnaires. Therefore, using a display of basic emotions represents a more reliable approach for measuring attitudes, with the implicit approach yielding the best results.

8.2. Discussion of the main findings

In this chapter, the main findings will be discussed in relation to the general aim of the thesis and specific partial aims, as outlined in Chapter 1. First, results will be categorised alongside the main pathways that are suggested to connect R/S with health, as proposed in Figure 8.1. In a second step, we will focus more specifically on potential reasons of deviating findings in associations of R/S with health. Therefore, this time results will be categorised alongside the potential sources of distortion of research findings in this area.

Figure 8.1 Research findings of this thesis in relation to a model of R/S and health



Note: Shadows indicate that due to measurement problems (especially social desirability bias) we do not observe the variables directly, but only use participants' self-reported view.

8.2.1. Religiosity and spirituality in relation to health outcomes

We explored pathways of R/S to health as shown in Figure 8.1, in particular the behavioural and psychological pathways, taking the third, social, pathway as a given.

8.2.1.1. Behavioural pathway

We found that both religiosity and spirituality were associated with more active adolescent leisure time choices. However, only the combination of religious attendance and spirituality was protective with respect to excessive Internet use and adolescent health-risk behaviours. Spirituality in the absence of religious attendance was in some cases associated with even more risky behaviour. Thus, our results support the findings of other authors, who associate R/S with healthier adolescent behaviour in general (Kub & Solari-Twadell, 2013). They contradict the assumptions of the authors who propose that this applies only to environments in which the religious conviction is supported by a social setting (Holmes & Kim-Spoon, 2016; Stark et al., 1982), as this is not the case of the Czech Republic.

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Our findings therefore suggest that R/S might be associated with adolescent behaviour independently of the sociocultural environment or that other factors have a stronger influence than this environment.

Factors other than the sociocultural environment could thus explain the protective role of R/S on adolescent behaviour, as we observed. Holmes and Kim-Spoon (2016) propose a series of other factors, based on two theories. The first is the social control theory (Hirschi & Stark, 1969; Smith, 2003), which poses that religious children experience more adult monitoring of their behaviour due to interconnected relationships in religious communities. The second theory is the divine interaction theory (Ellison, 1991), which poses that a perceived relationship with the divine might at the same time serve as a perceived oversight of one's behaviour independent of other relationships. However, we can also consider the positive encouragement of healthier behaviour. E.g., a perceived relationship to God might not be experienced only as a source of control, as hypothesised in these two theories, but may also be experienced as a source of safety and support (Kirkpatrick, 1992). This could provide a positive motivation to lead a life according to religious moral standards, i.e., living them out of a motivation to be a good person (Donahue & Benson, 1995). Another positive motivation for a desirable behaviour may add to this, i.e. the adolescents' tendency to worship and follow idols (Lin & Lin, 2007). This could also be applied to religious leaders and religious figures (God, Jesus, saints, Allah, Buddha etc.). Our findings provide some support for all these explanations, as discussed below.

First, with respect to the social control theory, we found that some adolescent behaviours (e.g. excessive television and computer use, leisure-time choices) were associated with R/S even when these constructs were assessed separately, but the most for religiosity. Therefore, social control may play a stronger role in these behaviours, which is confirmed by research showing that religious parents of adolescents are more likely to directly monitor their behaviour than non-religious parents (Mahoney, 2010). Parental monitoring might be even stronger in behaviours that are more observable, such as use of a family television, and could therefore be more controlled.

Second, with respect to the divine interaction theory, for health-risk behaviour we observed that R/S had only limited impact when assessed separately and that it was mainly the combination of R/S that played a protective role. This supports the divine interaction theory (Ellison, 1991), as it may be interpreted that adolescents internalise the norms for desirable behaviour, feel "observed by God" and may act according to these norms even in situations lacking direct adult control. At the same time, we can also consider the positive encouragement of healthier behaviour, i.e. behaviour based on a positive relationship to God flowing from a secure attachment to God (Granqvist, Mikulincer, & Shaver, 2010). Nevertheless, our findings could also be explained in the light of adolescent idolization. Adolescents might be inspired to have a healthier lifestyle in line with the values and lives of their religious community leaders or other religious figures.

Third, with respect to positive adolescent motivation, we found that spirituality in the absence of religious attendance was in some cases associated with even more risky

behaviour. These findings imply that the merely “being spiritual without being religious” and vice versa might not be sufficient to protect against risk behaviours. This resonates with the findings of various authors, who point out that it is internalised religiosity in particular that plays a protective role in behaviours (Pule, Mashegoane, & Makhubela, 2018), which corresponds to the divine interaction theory (Ellison, 1991) but also to explanations linked to the attachment to God and adolescent idolization. However, forcing adolescents to attend church does not seem to lead to desirable outputs and might, on the contrary, promote some kind of rebellion against the rules and authorities, consequently manifesting itself in an even higher occurrence of risk behaviour.

Thus, our findings suggest that the association of adolescent R/S and their behaviour is unlikely to be explained by one single theory. More probably, we can expect that several theories could be applied at the same time, with some of them, however, better explaining certain types of behaviour.

8.2.1.2. Psychological pathway

We did not find a protective role of R/S on mental health, but we found that certain R/S experiences and attitudes (e.g. anger towards God, perceived distance of God, lack of meaning and positive feelings towards one’s own life) were associated with poorer mental health (Chapter 6) as well as unfavourable physiological responses (cortisol level; Chapter 7). This seems to contradict the findings of the majority of previous studies, which report a protective role of R/S in mental health (Koenig, 2012). However, authors who focused on negatively experienced R/S, i.e., so-called religious struggles or negative religious coping, have often reported negative associations with health as well (Exline, Yali, & Sanderson, 2000), similar to our studies. An explanation for these negative associations could be that the stress due to questioning the foundations of one’s faith directly involves one’s own well-being negatively. However, it may also reflect, given the cross-sectional nature of most studies, that people with certain psychological predispositions are more likely to experience these types of struggles (Ano & Pargament, 2013). This is in line also with our findings in Chapter 6 and with the findings of other authors (Pargament, 2009; Pirutinsky et al., 2011). These authors distinguish between primary spiritual struggles, i.e. a spiritual struggle leading to distress, and secondary spiritual struggles, i.e. distress leading to a spiritual struggle (e.g. questioning God’s love when facing a serious illness), and complex spiritual struggles containing both types. Therefore, it is important to assess these signs of negative religious coping in the context of overall mental health and to properly assess the various potential explanations. This probably requires more longitudinal research, too.

We further found that non-religious spirituality, i.e. a focus on the meaning of life and on one’s own attitude to life as well as to other people, had a strong correlation with cortisol level, i.e. with a marker of perceived stress (Chapter 7). This is in line with previous findings of a higher R/S being associated with a lower level of cortisol in both clinical (Ironson et al., 2002) and non-clinical (Anyfantakis et al., 2013; Tartaro et al., 2005) samples. A lower cortisol level could be a direct consequence of practicing spiritual exercises, as studies report

a decrease of cortisol level following e.g. 8 weeks of a short daily meditation practise (Basso et al., 2019). Thus, these findings may also support our fourth pathway, as shown in Figure 8.1., directly linking R/S with physiological processes. However, we do not have enough information to distinguish whether these changes are mediated by psychological processes, e.g. a better coping with stressful situations.

8.2.2. The potential sources of deviating findings in the associations of R/S with health

Three potential sources, i.e. the sociocultural environment, different types of R/S and measurement problems, might explain the discrepancies in research findings regarding the association of R/S with health.

8.2.2.1. Sociocultural environment

The potential impact of the sociocultural environment in research on R/S involves especially the prevalence of R/S in various countries, i.e. whether religion dominates a country. The Czech Republic is an example of a secular society with very low percentages of religious people. The first part of this subchapter will briefly summarise and discuss the situation in the country. In the second part, we will discuss our other findings, related to research on R/S in secular countries in general.

The prevalence of R/S and the dynamics of change of religious views in the Czech Republic

We found a low prevalence of R/S in both the adolescent and adult national representative samples, confirming previous research by the Pew Research Center (2014) reporting that 76.4% of the Czech population do not affiliate themselves with any organised religion. Among Czech adolescents, 7.1% of the respondents reported weekly religious attendance and 9.1% were spiritual, i.e. scored in the highest quartile of the spirituality scale. The prevalence of religiosity in the adult sample was slightly higher, as 9.5% respondents called themselves a believer, member of a church, and 20.1% called themselves a believer outside the church. These figures are similar to those found by Vane and Stipkova (2013), who reported slightly higher percentages of religious respondents. The differences might either reflect the different scoring options used in this study or the trend of a decreasing prevalence of religiosity in the country, which was also observed by other authors (Pew Research Center, 2017; Hamplova & Nespor, 2009).

However, we also found that of all adult respondents, 29.1% were unstable non-religious, i.e. were non-believers who reported that their attitude could change in case of need and distress. Of all respondents, 3.3% were converts, with most of them (70%) reporting that a difficult life situation contributed to their conversion. These findings suggest that a shift towards religiosity could be expected in a substantial portion of non-religious respondents in problematic times, which implies dynamics that differ from those in predominantly religious countries.

R/S research in the Czech Republic that might be applicable to other secular countries

The Czech Republic is a very secular country, similar to e.g. North Korea, Estonia, Japan, Hong Kong and China. Unfortunately, we do not have comparable data from these countries, but we can presume that some of our findings, discussed below, could be applied also to other countries with a low religious affiliation.

In the psychometric evaluation of the Spiritual Well-Being Scale (Chapter 3) we found that a statement involving one's relationship to God (implicitly assuming the existence of God) reinforced problems with measurement that were already present, i.e. the problems with negatively-worded questions. An explanation could be that in prevalently secular countries a certain fraction of respondents might hold such strong anti-religious attitudes that it even complicates for them the thoughtful responding to a questionnaire on R/S. If they are not comfortable with the whole concept of R/S, they might feel resistance towards responding on spirituality items and might try to answer quickly. Thus, they might more easily overlook e.g. the inverse direction of the wording of an item. This might be true even for religious countries, but with a lower prevalence of non-religious respondents, these problems might not be so visible.

The sociocultural environment in secular countries may also interfere with the associations of R/S and health. For example, in Chapter 6 we observed an association of R/S with worse mental health among some religious participants, as already discussed in 8.2.1. Regarding the role of the sociocultural environment, we can conclude that these findings confirm the reports of other studies which show a lower life-satisfaction of religious participants in secular countries (Hayward & Elliott, 2014). Explanations of these findings relate to the role of the sociocultural context (Diener et al., 2011; Lun & Bond, 2013; Okulicz-Kozaryn, 2010) and the role of government regulations (Hayward & Elliott, 2014). However, in addition to these, our results offer another potential explanation, i.e. that the dynamics in the Czech Republic, and possibly also in other countries with a low religious affiliation, might differ from those in a more religious environment. The relatively large share of participants who indicated that they would turn to religion in a difficult life situation implies that when analysed by cross-sectional studies, this potential shift in religious affiliation might not be recognised. This might then potentially contribute to finding negative associations of R/S with health. Therefore, among participants in secular countries we could expect a different ratio of primary to secondary spiritual struggles, with a higher prevalence of secondary spiritual struggles resulting from a difficult life situation than in more religious countries. This could then affect the association of R/S with mental health in such countries.

8.2.2.2. Different types of religiosity/spirituality

A second cause for our discrepant findings regarding the associations of R/S and health might regard the kind of R/S that participants are living and practicing, i.e. not only their belonging to a specific religion, but also the way they live within a framework of a specific religion or spirituality. This includes differences in cognitive, emotional and behavioural dimensions of

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living R/S. Consequently, participants may differ in the level of internalization of R/S values (Ryan et al., 1993), in the type of R/S they are living with regards to consequences for their life, i.e., “healthy or unhealthy R/S” (Vaughan, 1991), their image of God (Jackson et al., 2018) and in the type of religious coping they use (Pargament et al., 1998). In Chapters 4, 7 and especially 6, we found that the group of religious respondents was quite heterogeneous and that the subgroups differed not only regarding their R/S attitudes, but also regarding their health behaviour and health. Therefore, the question might not be “Is R/S related to a better health?”, but “What type of R/S might be related to a better health and what type to a worse health?”. Items assessing the type of spirituality or spiritual coping should therefore be included in R/S analyses as potential confounders.

8.2.2.3. *Measurement problems*

A third factor that could contribute to the discrepant research findings on the associations of R/S and health regards problems in the measurement of R/S. One source of problems might concern the negatively-worded items, as described in Chapter 3. This applies to a broader research area than only R/S. However, we also found that different approaches to assess R/S yield findings which can be interpreted differently. More specifically, the research findings in Chapters 3-6 mostly reflect problems due to different definitions and understanding of R/S. These types of problems are summarised in a review of Koenig (2008) and in other publications (Hill & Pargament, 2003) showing that a different understanding of these concepts could indeed lead to contradictory findings. Burris, Sauer, and Carlson (2011), for example, reported religiosity to be associated with less adolescent alcohol use, while spirituality with more. Consequently, these authors argue that both R and S are associated with the search for the sacred, but that people might use different means to achieve this, and in the absence of religious commitment they could actually even use alcohol, tobacco, hallucinogens or sexual intercourse as means to discover meaning, purpose and connectedness with the self, others or the transcendent (Burris et al., 2011).

However, the findings reported in Chapter 7 suggest that a more implicit approach could be a better measure of hidden attitudes. This may be interpreted as pointing to the weaknesses of self-reported verbal measures in general, especially regarding social desirability bias. This seems to influence the measurement of R/S, as suggested also by Gittelman et al. (2015). Therefore, a more implicit approach in measuring R/S could improve the validity of measurement of these constructs and could also help distinguish different types of spirituality (the way R/S is lived and experienced), as mentioned above. We will address this issue further in the next paragraph.

8.2.3. **Addressing social desirability bias**

In Chapter 7 we assessed a new method for measuring implicit attitudes, the Emotion Based Approach (EBA). We found that compared to standard questionnaires, using a display of basic emotions yields higher correlations with cortisol levels, i.e. the validity criterion.

Moreover, assessment of the selection process, and not only of the final response choice, i.e. the implicit approach, seemed to lead to even better results, also in the associations with a second validity criterion, the DOPEN Questionnaire Lie Score. Thus, it seems that more implicit approaches might get closer to participants' real experiences and are not as loaded with social desirability bias. Using a display of faces with basic emotions may touch both dimensions of the social desirability bias, i.e. self-deception and impression management. Self-deception seems to be addressed by a non-verbal method assessment of responses, which also allows deeper feelings to be assessed, i.e. feelings beyond the cognitive reach of the respondent. Impression management seems to be addressed by use of an anonymous online survey and by monitoring the selection process to sort out cases in which the participants would even deliberately want to give incorrect answers (e.g. finally choosing joy as a response option even when they feel otherwise). Therefore, using this kind of implicit approach might be a promising way to assess attitudes regarding more personal topics.

8.3. Strengths and limitations

8.3.1. Quality of the sample

A big strength of this thesis is its use of large representative samples of both adolescents and adults. Adolescent data include the HBSC study, which is a cross-sectional WHO collaborative study that focuses on health and health-related behaviour in 11-, 13-, and 15-year-old children (Roberts et al., 2009) in 48 countries all-over the world. This means that our data are comparable to those of other countries. In addition, we analysed data from a unique national representative sample of the Czech adult population with nearly no missing values. This means that this data can also be generalised to the Czech population. Altogether, these data represent a contribution to our knowledge of R/S dynamics in a non-religious environment, as the Czech Republic is a typical example of a secular society

A limitation of our data is the overall low prevalence of R/S respondents in the Czech representative samples, which decreased the power of our studies, in particular regarding moderation. A second limitation is that the online sample used in Chapter 7 was smaller and not representative. However, the sample size and quality were more than sufficient for the analyses that we performed.

8.3.2. Quality of information

This thesis has several important strengths regarding the quality of the information it brings. First, we mostly used validated, internationally recognised instruments that have already been applied in various settings. This holds both for adolescent and adult samples. Second, it offers two tools for measuring R/S, an adapted version of a classical spirituality scale and a new tool for measuring implicit attitudes in the area of R/S. Third, it evaluates data which

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are based not only on self-reported measures of respondents, but also on cortisol levels, i.e. a more objective measure of a perceived stress, and it includes a scale for controlling social desirability bias. Fourth, by providing a new approach which could be adapted to other research questions, this study helps to address social desirability bias in quantitative measurement.

A limitation of this study is the missing values in the data on R/S in the HBSC survey, which we partly dealt with through multiple imputation and exclusion of some respondents. Another limitation in Chapters 4-6 might be information bias, as the data was based on the self-reports of respondents, which can be influenced by social desirability. This concerns especially the area of R/S (Sedikides & Gebauer, 2010) and psychological health (Shedler et al., 1993). However, all studies that use classical surveys in this area have this problem, so our data are comparable with the others. Moreover, we did not simply assess one dimension of R/S but used a combination of different R/S variables. Therefore, assessment of more dimensions increased the validity of the measurement. Furthermore, the study has two potential limitations, as reported in Chapter 7. First, we could not assess the full DOPEN Questionnaire Lie Score, but only 13 of its 14 items. A second limitation is that the online survey was administered in home conditions, which means we could not control possible disruptive elements. This reflects routine practice in most research, however.

8.3.3. Causality and confounding

A limitation of this thesis is the cross-sectional design of the studies. This type of studies analyses data obtained at a specific point in time; therefore, it does not allow us to make more decisive conclusions on causality. Our findings should preferably be confirmed by studies with a longitudinal or experimental design.

8.4. Implications

8.4.1. Implications for practice and policy

Our findings have several implications for practice and policy. First, we found that religious attendance and spirituality were associated with more active leisure-time choices and lower health-risk behaviour. This may imply that supporting healthy spiritual development of adolescents lowers the risk of undesirable behaviours. This could be done through family and school education as well as through different activities in leisure-times centres. Suitable activities might help to facilitate the process of finding one's own identity and to support the sense of responsibility for one's own life.

Our findings also showed that religious attendance without strong spirituality may not be protective or can even increase the likelihood of health-risk behaviour. Parents as well as churches could therefore be better informed of adolescent psychological development and possible negative consequences of pressure on adolescents in the area of R/S. At the

same time, supporting the internalisation of the spiritual values might represent the most effective strategy.

We further found that respondents who showed signs of religious and spiritual struggles and negative religious coping were at higher risk of also having mental health problems. These findings highlight the need for cooperation between pastoral carers and professionals in the area of mental health. All these workers should be aware of the two-fold nature of the issues; they should be adequately trained to recognise the warning signs, and if possible should develop professionally established cooperation.

Our findings of the associations of cortisol level with R/S imply that supporting healthy R/S and possibly concrete R/S practises (e.g. meditation) may help to manage stress. Where adequate, it could therefore provide another strategy to improve the health of clinical patients and to maintain the health of people who are living in stressful conditions.

8.4.2. Implications for future research

This study may also have several implications for future research. The first implication concerns difficulties in the use of spirituality scales in a secular environment, where special attention should be paid to negatively worded religious items. Based our results, we suggest that, if possible, the use of these items should be avoided. If they are used, an additional response option “does not apply to me”, should be considered on top of the current response options of the scale.

We found a heterogeneity within groups of religious respondents, with various categorisations leading to different findings. This implies that R/S respondents can differ in various aspects of R/S, such as the degree of the internalisation of their values, type of religious coping they use, their image of God, stability of their religious attitudes and other aspects. Thus, research on R/S should take into account these aspects. Moreover, it should include both religiosity and spirituality and consider their possible interaction. Findings on R/S with the use of just a single item, typically a question on one’s affiliation to a church, frequency of religious attendance or the importance of faith, should be interpreted with much caution, as this covers only one of multiple R/S dimensions.

Furthermore, we found that a high percentage of Czech non-religious respondents might turn to religion in difficult life situations. This shows that research in secular countries should take into account this potential shift to prevent confounded findings.

Finally, we found that that a more implicit approach measurement could yield a more valid assessment of attitudes than classic questionnaires. Future research could therefore focus on the further development and validation of these approaches. More concretely, other tools based on the Emotion Based Approach principle could be developed and tested with use of a wider range of potential biomarkers.

8.5. Conclusion

This study focused on the associations of R/S with health, on the role of various pathways and on explanations for some discrepant findings. R/S was associated with healthier behaviour; however, for some behaviours only the combination of both R and S was protective. Moreover, certain negative R/S experiences and attitudes were associated with a more adverse effect on mental health. We also learnt that the sociocultural context, type of R/S and especially measurement problems could contribute to the heterogeneity of findings on the associations of R/S with health.

Thus, this thesis supports the findings of other authors on the pathways of associations of R/S with health and offers additional insights into these mechanisms. It also offers some methodological considerations for research on R/S. It shows that R/S is a complex research topic requiring proper assessment i.e. not using only a single-item. Research on R/S should take into account more internal dimensions of R/S as well as potential confounding variables (sociocultural context, type of R/S, social desirability bias).

Finally, this thesis offers two tools for a better measurement of spirituality. The first one is an adapted version of a classical spirituality scale and the second is a new approach for measuring implicit attitudes in the area of R/S. Using this approach could help to decrease the effect of social desirability bias in survey studies on attitudes.

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