

The experienced impacts of using spirituality apps

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Abstract

Digitalization has instigated a transformation in individuals' spiritual practices, notably through the rising popularity of spiritual apps offering features like guided meditations, mindfulness exercises, and quick horoscope access. Despite the growing demand, scholarly literature in this domain remains limited. This study aims to explore the perceived impact of spiritual apps on users through the analysis of nine interviews, utilizing a thematic analytical approach. The analysis identified five themes: adopting a self-affirming attitude, improved interpersonal relationships, belief in a meaningful whole, support for self-development, and assistance in coping with mental challenges. Participants viewed these themes as addressing fundamental needs like belonging, safety, esteem, and self-actualization. The study contributes to understanding the interaction between spiritual apps and users and determining their added value.

Keywords: Spiritual apps, Thematic analysis, Perceived impact, Well-being

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In modern times, the practice of spirituality looks different. Digitalization enables the practice of spirituality to become more modern. Modern spirituality is driven by societal and personal transformation (Kourie, 2010). This contemporary form of spirituality embodies great parts of cultural and individual everyday life such as free time and vacation (Herntrei & Pechlaner, 2011). Media that is used for these purposes include among other things Instagram profiles, Youtube channels, blogs and mobile applications. Mobile apps in particular are easily integrated into users' daily lives due to their accessibility (Gemert-Pijnen et al., 2018). This poses a potential explanation for the increase of spirituality apps and gives rise to the inclusion of apps into spiritual practice.

Although mobile applications are already part of people's spiritual practice, they receive little attention in the scientific world. Research on spirituality or a sense of harmonious interconnectedness between self, others/nature, and the ultimate other which exists throughout and beyond time and space is advanced (Hunglemann, Kenkel-Rossi, Klassen & Stollenwerk, 1996). Dominant findings underline the essential nature of spirituality for health and well-being (Fryback & Reinert, 1999). Other studies focus more on the meaning-making of life (George & Park, 2017). However, spiritual apps are scarcely researched. So far, to my knowledge at the time of writing this thesis, there were only two articles which discuss spiritual apps. Buie and Blythe reflect on techno-spirituality in the IOS app store from a human factors perspective (Buie & Blythe, 2013). Gorichanaz's (2022) work focuses more on the first characteristics of spiritual apps such as their relation to spiritual wellness as well as their functionality and interaction. Hence, the limited knowledge of spiritual apps is not relational to the progress that has been made in other spiritual areas.

The question arises of what these apps look like. A prominent example is the app ‘Headspace’ which offers a variety of guided meditations related to subjects such as focus, sleep and sports. In the beginning, the app asks about the goals and priorities of its users. Thereafter, one is guided through meditations in line with these pre-selected topics. Another app relies on manifesting and faith. The ‘Law of Attraction toolbox’. When opening the app it will ask to add manifestations for the future. Then the user is guided through the steps of visualization. Further, the ‘Co-star’ app promises to understand human relations through NASA data. This app is a minimalist example of an astrology app, where one receives individual forecasts as well as some which are based on relative charts. Like the diversity of spiritual practices, applications available also show great variety.

They depict four main interaction styles namely, timers, notifiers, card decks and journals (Gorichanaz, 2022). Timers are often incorporated into meditation functions and serve as a controlling instrument for time. They are mostly depicted as counting down numbers visually or auditorily displayed digital alarms. Notifications emerge in the context of push notifications and aim to engage the user in spiritual practices. Card decks are especially used by tarot card apps. The function is arranged in such a way that the digital card decks resemble their real-life usage. Lastly, the journaling function is offered to help users reflect on prior experiences and thoughts by giving users the option to write entries and add photos. These interactional elements pose benefits as they are based on supporting the user in personalized ways.

However, the investigation of spiritual apps holds health benefits. Spiritual practices are shown to have a positive impact on well-being. The American Psychological Association defines well-being as ‘a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life’ (APA, n.d.). According to the

six-factor model of well-being, this state can be achieved by behaving in ways that allow for the dimensions of well-being such as self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff & Singer, 1996). In line with Ryff's theory, spirituality has been shown to foster well-being by increasing individuals' purpose in life (Visser et al., 2010). In turn, well-being facilitates flourishing, which beyond the absence of mental illness and distress characterizes complete mental health (Keyes, 2002).

Further, research on spiritual apps can improve scientific communication. The ambiguous nature of spirituality creates controversy in scientific literature. Already a decade ago, the question about the scientificity of spirituality raised several viewpoints. For example, Bash (2004) concluded in his scholarly work that spirituality is a subjective concept that is flexible and accordingly, it would not be possible to develop scientifically based instruments for assessing it. In contrast, Walach and Reich's (2005) thought experiment on spirituality's beneficial impact demonstrated that scientifically researching spirituality is possible. However, these divergent perspectives do not seem to be the result of the acclimatization with an initially unscientific viewed subject nor the insufficient exploration of spirituality. Almost twenty years later the controversy around spirituality seems to persist. For instance, Reed (1992) argues that spirituality still is not sufficiently developed as an independent construct to be measured. At the same time, spirituality can be researched using a multilevel meaning approach that focuses on the concepts included in spirituality (Vespa et al., 2017). Therefore, researching the experienced impacts could hold a way to provide evidence for the scientificity of spirituality and allow for its use in improving well-being.

Since spirituality is a multifaceted concept which is experienced in diverse ways, the present study will take into account the experiences and observations of subjects. Interviews

were conducted to allow subjects to freely express the impacts they experience through spiritual app usage. The aim was to look into the data in detail and identify themes. Therefore, the investigation will be qualitative.

As can be seen, despite its ambiguous nature and controversy about spirituality in the academic world, spiritual practices show a positive impact on practitioners' well-being. This finding combined with the trend towards acting spirituality out through spiritual apps and the unbalanced amount of given literature stresses the need for further research on spiritual apps. For this reason, the present study will focus on the research question: ‘ What are the experienced impacts of using a spiritual app?’

Methods

Design

The present thesis was conducted as a part of a larger research focusing on user experiences of spiritual mobile applications., whereby the present study focuses on the experienced impacts of the users. Ethical approval was given by the Ethics committee of the faculty of behavioural, management and social sciences of the University of Twente on (02.12.2022) (request number: 221450). A team of 8 students, including bachelor as well as master students collaboratively worked on this research topic. From these joint efforts, there emerged 29 interviews. From this pool, 9 interviews were used for the present study. The decision for these interviews was based on each interview's value in answering the research question. More concisely, interviews that did not add a new insight or perspective were excluded.

Participants and Procedure

The prerequisite for taking part in the present study was using a minimum of one spiritual mobile application and being at least 18 years old. Subjects were allowed to elaborate on applications which they would define as spiritual to account for what users regard as spiritual apps. Apart from this, participants were only included in the study if they signed the informed consent form and thereby agreed with the terms and conditions given (see Appendix A).

The recruitment of participants took place via three paths. The first path is recruitment through the study participation and management platform SONA of the University of Twente. In the context of this, participating students received 0.5 sona points. Further recruitment encompassed convenience sampling, meaning that participants from the students' social environments were invited to participate. The social reach of students was supported through the distribution of the study on social media such as Instagram, Reddit and Facebook. A short overview of the study and information about the access was displayed.

Participating subjects were then interviewed in person or via the video conferencing tool of Microsoft Teams. For the in-person interviews participants and researchers agreed on a time and date. In the online conferencing context, participants received an additional invitation link before the interview. The information letter (Appendix B) as well as the informed consent were read and signed by the participants before the interview while receiving room for questions. Further, consent for audio recording the interview was requested verbally at the beginning of the interviews. Overall, all interviews were conducted in English and their length ranged from 30 to 60 minutes. Thereafter, interviews were transcribed using transcription tools such as Atlas.ti. For reasons of anonymity, participants' names were changed into acronyms.

Participants' ages in the 9 interviews used for the present study ranged from 22 to 54 years. Moreover, did participating individuals identify as female and three as male. In regards to

nationality, five participants were from Germany, two from the Netherlands, one from Spain and one from Mexico. With 8 participants from Sona Systems, the majority of the study's participants were students of the University of Twente.

Materials

The informed consent used as well as the form with information about the study were provided by the pool of students within spiritual app research (see Appendix A and B). The semi-structured interview scheme was designed jointly by some of the graduating students and the research supervisor. The resulting interview protocol comprises two parts with the first part gathering demographic information about participants and the second investigating aspects of spiritual mobile applications such as motivation for usage, impact and usability (Appendix C). In total, there are 17 questions of which 4 include additional probing questions.

Data Analysis

The data that emerged from the interviews was analysed using the qualitative research method of thematic analysis. Thematic analysis is utilized to find and analyze meaning-based patterns in the data as well as report these while elaborating on a deeper understanding of participants' expressions. Thematic analysis stands out among qualitative methods due to its adaptability. It is not tied to any pre-existing theoretical framework or epistemology (Braun & Clarke, 2006). By implication, the researcher's formulation of a theoretical foundation is essential during the analysis. In the context of the present research, an experiential orientation is embraced. The focus is on looking into the subjective experiences and emotions of the participants.

In line with this, semantic as well as, latent coding are used meaning that both what participants said verbatim as well as the interpretation of the underlying meaning of what they said are taken into account. Further, the analysis was executed using a combination of inductive and deductive coding (see Figure 1). First, the data was treated inductively. This means that the initial coding and the resulting themes were based on what participants expressed. During the analysis, a deductive approach was introduced by including Ryff's theory of psychological well-being. Ryff's theory is based on six areas of psychological well-being namely: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance (Ryff & Singer, 1996). These six areas guided the formulation of some of the themes. This is explained in more detail in the following sections on Braun and Clarke's (2006) six phases of thematic analysis.

In the first phase “familiarization with the data” all 29 interview transcripts were read to get in touch with the nature of the data. The second round of reading was aimed at sorting out transcripts which did not include relevant information to answer the research questions and transcripts that did not add additional insights. Moreover, transcripts which included more lengthy or in-depth elaborations on the experienced impact of using spiritual apps were prioritized. This led to a final set of nine transcripts.

During the second phase “Generating initial codes” transcripts were scanned one by one and all identified meaningful expressions on the experienced impact of spiritual apps were marked. Care was taken to ensure that each segment was coherent and self-contained. Then, marked segments one by one were assigned codes that descriptively resemble their essence and were summarized in a table.

A reflective attitude was then adopted to consider and evaluate the impact of the researcher's perspective based on the sum of their own experiences. The fact that the researcher comes from the field of psychology was reflected upon. A particular focus was placed on codes that were similar to the psychological use of words, such as codes like emotion regulation and cognitive regulation. For these codes, the corresponding excerpts were checked to see whether these code names best described their excerpts' essence. Another point for reflection was the researcher's knowledge of compassionate technology, which is about the merging of behavioural cues and technologies (Gemert-Pijnen et al., 2018). Formulations of codes such as "motivating features" originate from this field of knowledge and were evaluated. Finally, the following codes were formulated: self-appreciation, self-care, self-confidence, empathic interaction, online interaction, higher power, meaning of life, motivating features, habit change, emotional regulation and cognitive regulation.

In the third phase "searching for themes" the table was reorganized so that codes with similar content were listed next to each other. The codes that were positioned nearby were then compared with each other in terms of similarities and differences in meaning. This comparison served as a guide, as more similar codes were grouped into an overarching theme and codes that were different were re-evaluated and assigned to other themes.

For example, in an initial phase the codes "cognitive regulation" and "self-care" were grouped as respective excerpts conveying spiritual app usage that promoted participants' well-being. However, further comparisons showed that self-care was expressed as a larger concept linked to well-being, whereas cognitive regulation was used more selectively in situations where participants' minds played a central role in the experience of stress. Therefore, the codes self-care, self-confidence and self-appreciation were grouped as the theme "Adoption of

self-affirming attitude” and the code cognitive regulation together with emotional regulation was assigned to the theme “Assistance in coping with mental challenges”. Then, themes that were found were set aside and codes were assembled based on the six areas of psychological well-being by Ryff. Both sets of themes were included in the following phase.

The fourth phase “Reviewing themes” was introduced by evaluating the coherence and self-containment of each theme. Then themes were looked at in the context of their relevance to the research question. This revealed that four excerpts did not clearly state that the user's experienced impact was attributable to the spiritual app but rather spirituality in general. The respective codes were excluded and themes were revised. Further, the themes that were inductively created were compared to the themes that emerged from the six areas of psychological well-being by Ryff. This led to the approval of themes formulated based on the data and the replacement of two themes that were better described by the themes inspired by Ryff's theory of psychological well-being namely improved interpersonal relationships and support in personal development.

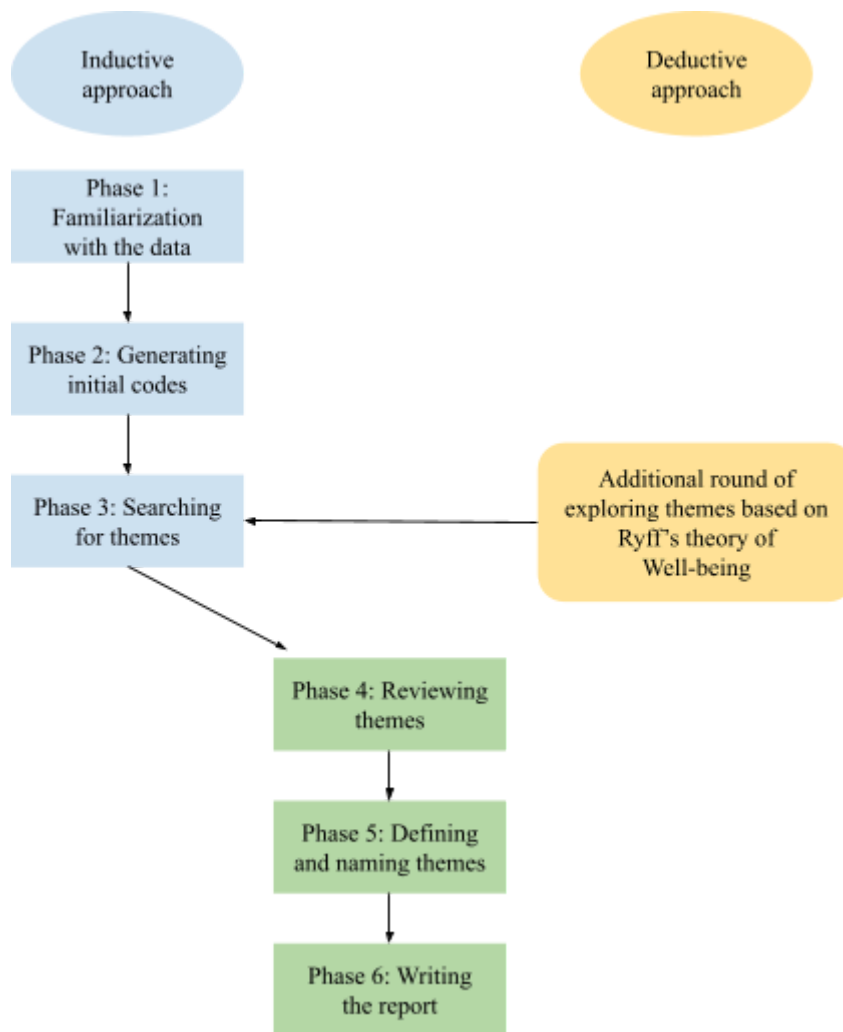
During the fifth phase “Defining and naming themes” the ultimate set of themes was named and descriptions of their content were added. Hereby, the descriptions provided a further point for evaluating the mutual exclusiveness of all themes. Finally, the sixth phase of “Writing the report” brings forth a summary of themes with respective descriptions and codes. Excerpts from the data were used to illustrate respective patterns. For readability purposes, some excerpts were shortened and corrected in terms of grammar while making sure the essence was conveyed.

Challenges included that participants did not always relate their statements to the spiritual apps but to spirituality as such. This led to the exclusion of four codes because they were not useful for answering the research question. Furthermore, the merging of the inductive and

deductive working methods presented a challenge. Although initially working inductively has the advantage that the researcher approaches the data with an open mind, there is a risk of holding onto the patterns developed. This was counteracted by using the codes independently of the themes that were initially formed and formed themes based on the theoretical framework of Ryff.

Figure 1

Overview of the course of the analysis including Braun and Clarke's six phases (2006) and the confluence of the inductive and deductive approaches



Results

The spiritual apps that the nine participants discussed included Balance¹, The Pattern², Insighttimer³, Co-star⁴, Healthy Mind Innovations⁵, Headspace⁶ and Sanvello⁷. The thematic analysis of the data on users experienced impacts of spiritual apps revealed five themes as depicted alongside descriptions of themes, codes and interview occurrences (see Table 1). The themes consist of the adoption of a self-affirming attitude, improved interpersonal relationships, belief in a meaningful whole, support for personal development and assistance in coping with mental challenges. Respective themes will be presented in the following.

Table 1

Overview of the experienced impacts of using spiritual apps

Theme	Definition	Code
Adoption of self-affirming attitude	Acquiring a more positive view of the self, accompanied by feelings of esteem	Self-appreciation
		Self-confidence

¹ Balance: Meditation, Sleep, Stress. (n.d.). <https://balanceapp.com/>

² The Pattern: Birth Charts, Astrology. (n.d.). <https://www.thepattern.com/>

³ Insight Timer: Meditation, Sleep, Stress (n.d.) <https://insighttimer.com/>

⁴ Co-Star: Hyper-Personalized, Real-Time Horoscopes. (n.d.). <https://www.costarastrology.com/>

⁵ Healthy Minds Innovations: Mind, Well-being, Skills (n.d.) <https://hminnovations.org/>

⁶ Headspace: Meditation, Sleep. (n.d.). <https://www.headspace.com/>

⁷ Sanvello: Stress, Anxiety, Depression. (n.d.). <https://sanvello.com>

Enhanced interpersonal Relationships	improved contact or interaction with individuals other than themselves	Self-care Empathic interaction Online interaction
Belief in a meaningful whole	gaining meaning through the alignment and interaction of everything including ourselves	Higher power Meaning of life
Support for Personal development	the improvement of the self through developing one's abilities	Motivating features Habit change
Assistance in coping with mental challenges	dealing with problems relating to the mind	Emotion regulation Cognitive regulation

Adoption of self-affirming attitude

The theme “adoption of self-affirming attitude” describes the enactment of a self-reliant constitution and the development of one's self-esteem. As a part of this, participants conveyed self-appreciation i.e. enjoying one's personality as a result of spiritual app usage. ‘Janet’ (female, 26 years old) reported using the app “Pattern” and responded to the interview question about the app’s impact on her life with the following:

“So I would say around 2020 I started using the pattern.. at that time I was not at a very good place in my life... I got out of that relationship which was also a little bit toxic... I did not really learn how to properly set boundaries growing up and that obviously has an impact on how people treat you and your self-worth. That made me appreciate myself more for who I am.”

Janet describes that her starting to use “the Pattern” coincided with her leaving an unhealthy relationship. While Janet is reevaluating that past depreciative relationship, she realizes her contribution to the depreciation of herself through people-pleasing tendencies and relates it to her younger unknowing self. She adds that this process made her appreciate herself. Earlier in the interview Janet shared that she uses spirituality to reflect on her stance on life events and develop herself. Other participants reported similar experiences with reflecting on past experiences with spiritual apps, taking a step back to form a new approach regarding having no structure in everyday life or bad habits or resulting in increased self-esteem. To include her words:

“I use spirituality as a way to make sense of all those things.. It also helps me to reflect on how I feel in my life about certain situations and develop.”

Further, participants express self-confidence and set it concerning spiritual practices i.e. having trust in one's abilities. For example, 'Charlotte' (female, 23 years old) shares her experience with using the app "Balance":

"..spirituality gives me trust in something and also trust for myself, that I am on the right track in my life... my friend said that the app helped him a lot and I thought it is a very nice idea to meditate more regularly. And I believe that meditating really helps me as well to focus on myself... ."

She presents spirituality as the source of her trust in "something" that she does not further specify. Since other participants associate the word "something" with a higher power, which we will come to in a later section, one could, with a cautious attitude, consider the possibility of her usage of the word "something" as meaning "higher power". She further connects spirituality with trust in herself and relates it to her self-approved progression through life as meditating via "Balance" by focusing on herself. The trust in herself resonates with adopting a self-affirming attitude in the way that she adopts the stance that she can rely on herself to form a life she enjoys. A more concrete example of this self-confidence through spiritual app usage is reflected by Janet:

"Sometimes I also like to look back at my pattern even though I read through them already and check for the upcoming timing or cycles and try to remember myself what they were saying about my career... I never thought I would work in the music industry and now I work in the music industry and I think I am very happy about that. I do think it made me more confident."

She insinuates her disbelief about working in the music industry before, and later she enters this area of profession which she relates to positive feelings. In retrospect, she leads her increased confidence back to “it” which is a referent for “the Pattern” usage.

In line with creating an enjoyable life, participants voice the practice of self-care i.e. actively preserving one’s well-being. For instance, participants convey awareness of inner needs and relate it to increased self-care because of spiritual app usage. Others refer to the spiritual practice of meditation through apps as a self-care-increasing factor. Charlotte reports:

“..to see the app as a tool for myself that helps me to meditate... And meditating then makes me less stressed, as I give myself this break from the day..”

She regards meditation via “Balance” as a break from her everyday life which she actively introduces, and which leads to stress reduction. Alongside other participants who practice listening to inner needs, Charlotte reports an active role in applying well-being-preserving practices through meditation.

Improved interpersonal relationships

The theme “Improved interpersonal relationships” comprises participants' expressions of improved contact or interaction with individuals other than themselves. As a part of this, participants report emphatic interactions i.e., reactions and communication guided by awareness and understanding of the other’s perspective. This includes experiences where participants connect on a deeper level with others through the exchange of emotional disclosure and empathy as well as reacting more flexibly to the potentially irritating behaviour of their relatives through practising relaxation via spiritual apps. To demonstrate, Catherine, as a response to the question

“Does the use of this app influence your social relationships?” (female, years old) conveys the interaction with her children as the following:

“So I'm more relaxed and therefore probably above all in connection with the interaction with the children.. an influence that I'm then not so irritated when they do something that I don't like.”

Catherine reports being more in contact with the way she interacts with her children because of a deeper relaxation state. She concludes that she experiences fewer negative feelings when confronted with the unwanted behaviour of her children.

Further, some spiritual app features enable online interaction i.e., communicating or connecting in a digital environment. The experiences of ‘Magda’ (female, 23 years old) demonstrate the nature of a possible online interaction:

“..you also have a section where you can see/message your friends and see their horoscopes... But you can also interact with your friends if you want to.”

Magda describes an online interaction with her friends on “Co-Star” using the messaging or horoscope function. Also, other participants underline the social value of sharing and exchanging a common interest via the app.

Belief in a meaningful whole

The theme “Belief in a meaningful whole” can be understood as gaining meaning through the alignment and interaction of everything including ourselves. This belief seems to be central to a variety of spiritual practices and is also reflected by the participants. “Catherine” (female, 50 years old) says that she uses an app called “Insight Timer” to meditate:

“..the only one that I use on a regular basis is Insight Timer. It's an application with different kinds of meditation..”

Catherine adds that the practice of meditation via “Insight timer” is related to spiritual practice or getting in touch with the spiritual world:

“Definitely to connect to my spirit. ..this is, this is what keeps me connected somewhere bigger, higher, you know, to something, something more powerful,..”

She refers to something bigger, higher and more powerful. Adjectives that fit the description of a higher power. Her usage of the word “something” suggests that she is not certain about the form of this potential higher power. She adds that this “something” meets her need for connection and her way of phrasing supports the assumption that this connection to a potential higher power gives her meaning. Another participant named Magda underlines gaining purpose through a higher power she gets in touch with through “Co-Star” usage:

“.. it's comforting to think that I don't know the universe or whatever you want to call it, maybe for example, looking out for you or that there's a bigger purpose.. Sometimes in the beginning of the week, I check the horoscope to see what's going on for me, I guess, in the universe.”

Magda also expresses uncertainty about the description of a higher power. She provides the term universe and then signifies that people favour other terminologies by giving the question of defining it back to the generality. Thereafter, she expresses a sense of comfort, protection, and purpose through what she refers to as the universe. The way Magda is phrasing things, it seems like the horoscope function of “Co-Star” acts as her channel to get in touch with information

from this higher power or universe. Again, another participant focuses more on the interactional aspect of it. Janet shares her experience with the other astrology app “Pattern” as:

“I was reading about how much the moon is affecting the ocean and the nature and I do think that it also makes sense than to say that it is also affecting us for we are part of this world.”

She incorporates terms that describe nature and the interactions of its parts resulting in the argument in favor of a meaningful whole including us humans.

The concept of purpose is picked up by other participants as well, thereby forming the theme of “Meaning of life” which can be described as giving one’s life a meaning or purpose. This theme is best reflected by the following excerpt of “Tom” with the app “healthy mind innovations” (male, 24 years old):

“..I would say, my life's purpose or life's meaning is to.. spiritually develop myself... So first of all I used the app because it's a very systematic approach. So there are different kinds of pillars that umm.. awareness, connection, insides and purpose.”

Tom expresses actively choosing spiritual development as his life’s meaning or purpose. He adds that the structured presentation of the foundations of spirituality including purpose appealed to him. Participants differ in the way they conceptualize “Meaning of life”. For example, Tom sees it as adding meaning or goal to his life whereas other participants use spirituality and spiritual apps to make meaning out of their experiences that are taken together form a life. Aside from the spiritual development that Tom takes meaning from there is a pattern of support for personal development which spiritual apps are utilized for independent of the belief in spirituality as described in the following section.

Support for personal development

The theme “Support for personal development” comprises the improvement of the self through developing one’s abilities with the help of spiritual apps. It includes the habit change i.e., modifying an undesired but settled practice. To give an example, “Jackson” (male, 23 years old) describes his change of habits while using the app “Headspace” as the following:

“And now, I see that the app really influenced my daily morning routine, which is pretty nice and it really gives me a lot of structure. So yeah, right now I really take advantage of that and use it every single day.”

Jackson addresses several areas of his habit change. He pinpoints “Headspace” as the influence behind changing his daily mornings. He proceeds with the added value of the structure that he acquired through the habitual change and expresses his continuous usage of the app. In contrast to Jackson, other participants use spiritual apps to change their bedtime routine for better quality of sleep or decrease their smartphone usage through the app. Again other participants express their happiness about decreased smartphone usage.

This habit change is supported by interactive features that are incorporated in spiritual apps called motivating features i.e., features that interact with the user in a way that promotes continuation of practicing. To illustrate (Charlotte):

“So, it gives me meditating as a routine, umm, it reminds me, it motivates me and yeah, I feel like it is really good for me.”

Charlotte describes establishing a meditation routine in which “Balance” supports her by sending reminders and motivations which she approves. Common reminders and motivating features

include push notifications. Other features picked up by the participants include levels that are adjusted to the abilities of the user and rewards such as continuation streaks and graphs.

Assistance in coping with mental challenges

The theme “Assistance in coping with mental challenges” addresses dealing with problems relating to the mind. It encompasses emotion regulation i.e., influencing one’s emotions about intensity and usefulness. “Maya” (female, 22 years old) expresses the influence of spiritual apps on emotion regulation as the following:

“ It was right after I went to therapy myself and my therapist told me that they are good. Especially for mindfulness meditation umm, is, it is really helpful for preventing or coping with anxiety.”

Maya describes the spiritual practice of mindfulness meditation via “Sanvello” as a resource before and during the presence of anxiety. In line with Maya’s experience, participants mainly list mindfulness practices such as yoga and meditation as coping strategies for regulating feelings such as anxiety and stress.

Apart from emotion regulation, there is cognitive regulation i.e., influencing one’s thoughts concerning burden and usefulness. Participants relate the cognitive regulation to the mindfulness practice of meditation. To illustrate, Charlotte describes her experience:

“ So, the app really improves me being mindful and I love this feeling... And, umm, it helped me yesterday as well to have a more objective view on my thoughts and things going on you know? And umm, afterwards I felt emotionally a little distant even though I kind of dealt with my emotions during the meditation..”

Charlotte expresses cognitive regulation in the sense of distancing herself from the subjective interpretations of her thoughts and experiences which she says was helpful to her. She relates the process of taking a more objective view to meditation. Charlotte picks up the term emotions regarding cognitive regulation which underlines the interaction of mental functioning.

Discussion

This study aimed to explore the benefits that users derive from engaging with spiritual apps by drawing insights from a total of nine interviews. Employing thematic analysis five key themes were identified, including the adoption of a self-affirming attitude, improved interpersonal relationships, belief in a meaningful whole, support for personal development, and assistance in coping with mental challenges. The current study serves to emphasize the importance of spiritual apps as beneficial tools for enriching various aspects of users' lives. Distinguishing itself from prior studies that focused on interaction styles and relations to spiritual wellness (Gorichanaz, 2022) or technological features (Buie & Blythe, 2013), this study provides a refined understanding of how participants experience the added value of respective spiritual apps while offering insights into the specific benefits individuals experience through their engagement. Participants experienced benefits characterized by an offer for self-actualization, awoking positive feelings and feeling supported by the app in various situations and tasks of everyday life.

Although respective themes resemble distinct facets of users who experienced the impacts of using spiritual apps, they show commonalities. For instance, all themes indicated striving towards enhanced well-being. Well-being as described by the foundational Six-factor model of psychological well-being (Ryff, 1996) can be achieved through autonomy, a feeling of purpose and meaning in life, positive relations with others, self-acceptance, environmental

mastery and personal growth and development. Although two themes namely “improved interpersonal relationships” and “support for personal development” were inspired by Ryff’s theory of psychological well-being, the remaining themes’ content is resembled by the six factors of Ryff. To illustrate, the theme “belief in a meaningful whole” within which participants conveyed their view that the purpose of their life is about spiritual development shows commonalities with the factor “Feeling of meaning and purpose in life⁸” (Ryff, 1996). Further, the theme “adoption of a self-affirming attitude” which is characterized by the utilization of spiritual apps for fostering self-confidence, self-care and self-appreciation and the factor “Self-acceptance⁹” share the embracement of a positive attitude about themselves. The theme “assistance in coping with mental challenges” reflects spiritual apps’ support in mental and cognitive regulation and thereby addresses the regulation part of the factor “Autonomy¹⁰”.

Another common feature of the themes is the experience of satisfying needs that are central to humans via spiritual apps. Common needs participants expressed to fulfil by using spiritual apps included the need for safety, belongingness, development and esteem. For example, feelings of belongingness arose from improved relationships and a belief to be part of a spiritual whole. In his fundamental “Hierarchy of Needs” which contemporary theoretical frameworks build upon, Maslow (1943) lists the need for safety, belonging, self-actualization and esteem alongside physical needs. According to him, the fulfilment of these needs leads to a sense of motivation and satisfaction in humans.

Moreover, some themes that emerged from the use of astrological apps as well as mindfulness apps display a notion of reflection and insight. More specifically, participants

⁸ Factor *Feeling of meaning and purpose in life: focus on objectives and a belief in the meaningfulness of life*

⁹ Factor *Self-acceptance: feeling positively about self, accepting multiple aspects of oneself*

¹⁰ Factor *Autonomy: Acting autonomously and regulating behavior without being influenced by social pressure*

conveyed using horoscopes to reflect on themselves leading to insights or gaining insightful thoughts during meditations. According to Krause and Stark (2010), reflection prompts enhance learning outcomes and lead to better problem-solving. Furthermore, self-reflection contributes to positive thinking, learning motivation and self-regulation (Wang et al., 2017).

Another common feature of experiences with mindfulness-based apps was users' ability to induce relaxation. As a result of relaxation, participants reported being more empathetic in their interactions with those around them and being able to better regulate their feelings and thoughts. In both cases reducing the intensity of emotions played a central role. In line with this, Peveler and Johnston (1986) found relaxation to decrease arousal and distress. Furthermore, some participants perceived the app-induced relaxation as enjoyable self-care. Relaxation is found to increase the feeling of happiness (Forbes et al., 2017).

Speaking of happiness, a variety of positive feelings was associated with the spiritual apps participants were using. To begin with, participants expressed that they felt supported by spiritual apps. Terms such as "it helps me.." and "it gives me.." were frequently used by participants. Particularly, statements were related to growth and more interactive functions such as motivating features and guided meditations. Smith (2010) found the feeling of being supported to be associated with perceptions of one's learning outcomes. Moreover, the feeling of being supported is found to reduce self-reported stress (Francis et al., 2018). Other positive feelings participants expressed included happiness and comfort. These feelings are put in relation to the added value of the spiritual app on the user such as achieving goals and a belief in a higher power that they live out using spiritual apps.

Limitations and Future Directions

In the frame of the current study participants were not given an ultimate definition of a spiritual mobile application. Instead, the study provided flexibility in regards to what is perceived as a spiritual app while aiming to gather a diverse set of data on users' experienced impacts. The findings show that many of the identified features were exclusive to astrological apps and mindfulness app usage. For example, relaxation was only experienced in the context of mindfulness apps. Further, many statements within the theme of "support for self-development" were limited to mindfulness apps. In contrast, the expressions relating to belief in a higher power and the interplay of everything were taken up by participants who used astrology apps. Hence, a division between the two types of spirituality became apparent.

One side ties in with spiritual wellness and self-realization whereas the other side of spirituality is more about finding support by belief in a higher power in a religion-like manner. For this reason, the division of spiritual apps into these two categories holds the potential to understand each concept as a single entity. In a future study, this could be achieved by first dividing the data based on the type of app participants are using e.g. astrology, tarot vs. mindfulness. A thematic analysis can then be carried out for both app types. In this way, both types can be unfolded anew thereby holding the potential for a deeper understanding of the experienced impacts of spirituality apps.

Furthermore, three themes needed to be excluded in the analysis process as questions about spiritual apps' experienced impacts were answered through spirituality in general. Although this blend of spirituality and spiritual apps underlined participants' acceptance of this modern way of spiritual practice, the investigation of spiritual apps as such became challenging. The fact that the semi-structured interview addressed questions about general spirituality before continuing to questions on spiritual apps might have influenced participants' understanding of the

questions. Therefore, future research should address this fusion by excluding questions on general spirituality and incorporating anchor points into questions. Potential anchor points in terms of spiritual app usage could include concepts that are exclusive to apps such as features.

The focus of this research was the clarification of the experienced impacts of spiritual app users. Since participants expressed only positive impacts, the question about experienced risks or negative impacts arises. The reliance on astrology carries the risk of “fortune-telling addiction” (Das et al., 2022) Furthermore, mindfulness-based spiritual apps are quickly developed and brought to market, which has led to many psychoeducation-based features not being based on scientific evidence raising questions about their trustworthiness (Gemert-Pijnen et al., 2018). Therefore, future studies should address questions about the experienced downsides of using spiritual apps to develop a balanced view of spiritual apps' value for users.

Regarding the subject of a balanced view, the individual perspective of the researcher on the investigation of the experienced impacts of spiritual apps on users. The study was conducted in the frame of a graduation in clinical psychology and therefore the influence of this background cannot be excluded. This was acknowledged by continuous reflections on the analysis decisions made and the adoption of an iterative approach.

Conclusion

This study underlines the diverse impacts that users of spiritual apps experience by forming a modern way of engaging in spiritual practices. Experienced impacts include adopting a self-affirmative attitude, improved interpersonal relationships, belief in a meaningful whole, support for personal development and assistance in coping. The identified themes address multiple aspects of personal well-being including autonomy, purpose, self-acceptance, positive

relationships and personal growth. Common features among experienced impacts included reflection and insight, relaxation and positive feelings such as feeling supported or happy. Overall, mindfulness-based spiritual apps were utilized for self-realization purposes whereas astrology-based apps were fostering the spiritual belief in a higher power. Irrespective of their focus, spiritual apps were utilized to promote the satisfaction of needs such as safety, belongingness, development and esteem.

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Appendix A

Consent form

Informed consent

Authors: BMS Ethics Committee with input from Human Research Ethics TU Delft

Last edited: 20-01-2022

This is a research project concerning spiritual smartphone applications. The project is designed to gather information about people's experiences and thoughts on applications revolving around modern spirituality/New Age.

Consent Form for *User Experiences with Smartphone Apps for Spirituality*

YOU WILL BE GIVEN A COPY OF THIS INFORMED CONSENT FORM

Please tick the appropriate boxes

Yes No

Taking part in the study

I have read and understood the study information dated [02-12-2022], or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.

I consent voluntarily to be participant in this study. I understand that I will not be paid for my participation. I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason and without any negative consequences. If I decline to participate or withdraw from the study, no one will be told and it will not affect my relationship with the University of Twente or with Drexel University.

I understand that taking part in the study involves being interviewed on the Zoom or Teams video call platform. The interview will last approximately 30-60 minutes. Notes will be written during the interview. The interview will be audio- and video recorded, and after the video call has been transcribed into text, the recording will be destroyed.

Use of the information in the study

I understand that information I provide will be used for scientific articles published in academic journals. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure.

I agree that my words can be quoted in research articles. The research output will refer to me with a pseudonym and I will not be identifiable from the paper.

I agree to be audio/video recorded.

I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

Future use and reuse of the information by others

I give permission for the transcribed, anonymized interview that I provide to be archived in an online repository by the University of Twente for 10 years, so it can be used for future research and learning. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions. Personal information collected about me that can identify me, such as [e.g. my name or where I live], will not be shared beyond the study team.

Signatures

Name of participant [printed]

Signature

Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Name of researcher [printed]

Signature

Date

Study contact details for further information: h.k.toivonen@utwente.nl

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the Secretary of the Ethics Committee/domain Humanities & Social Sciences of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-hss@utwente.nl.

Appendix B

Information sheet

Participant information sheet

Research Project: User Experiences with Smartphone Apps for Spirituality

Smartphone applications focusing on modern spirituality (New Age) have been increasing in number, but very little is known about the experiences of people using such apps. This study is conducted as a collaboration between Assistant Professor Heidi Toivonen from Psychology, Health, and Technology at the University of Twente, the Netherlands, and Assistant Teaching Professor Tim Gorichanaz from the College of Computing and Informatics at the Drexel University, Philadelphia, the US. We study the experiences of people who use spiritual applications such as Saged, Sadhguru, Spiritual Stories Daily, or any of the other applications available focusing on modern spirituality/New Age lifestyle and practices. Note that we are not recruiting participants using applications focused on traditional religions, such as any of the existing Christian or Muslim applications.

Participation in this research is voluntary and no incentive for participation will be provided. The research involves participating in a one-on-one interview on an online video call, using e.g. Zoom or Teams. The interview will be conducted either in English but also in other languages, in case the interviewer is fluent in it and it is the participants' first language. The interview will last for 30-60 minutes. The participant will be asked questions about their personal views on modern spirituality and their thoughts and experiences of using any smartphone application related to spirituality. The participant can decline to participate and withdraw from the research at any time, without any negative consequences, and without providing any reasons.

The interviews will be audio- and videorecorded. The interview data will be fully anonymized upon transcription, and all interviewees will be referred to with pseudonyms throughout the analysis and in the final written works produced from the data. Individual participants cannot be identified from the articles written using this data. The data will be stored online in a safe environment according to the rules of the University of Twente for a period of ten years. The interview data will be used for scientific research published in research articles written by Profs. Toivonen and Gorichanaz.

Responsible researchers and contact persons for questions about the research and rights of research participants: Assistant Professor Heidi Toivonen h.k.toivonen@utwente.nl and Assistant Teaching Professor Tim Gorichanaz gorichanaz@drexel.edu

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the

researcher(s), please contact the Secretary of the Ethics Committee/domain Humanities & Social Sciences of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-hss@utwente.nl

Appendix C

Interview Protocol

Welcome to this interview about spiritual mobile applications. My name is ___ and I am doing this interview because ___ (I am part of a group of students working on this project, and we will collect interview as data for our Bachelor's theses and eventually a research paper written by our supervisor.)

Have you read the information form? Are there any questions at this point?

I will need your written consent by email in order to be able to use this interview.

Do I have your permission to record this interview? [If yes, turn on recorder.] Is it okay if I make some notes for myself during the interview?

Your participation in this interview is voluntary. Remember, you can choose to skip any question for any reason. You can also end the interview at any time.

The information I'm collecting today will be stored separately from any of your personally identifying information, such as name and email address. The interview will be transcribed and anonymized so that you cannot be identified from it.

Quotations from the interviews may be used in Bachelor's theses or publications based on this research, but all data will be presented anonymously. I will go to every length to make sure you cannot be identified, even implicitly, from your words or any locations or services you describe.

If you ever have any questions about this interview, you can contact me at ___ or my supervisor Heidi Toivonen at h.k.toivonen@utwente.nl. If you have any questions about your rights as a research participant, you should contact my supervisor.

Now, let's start the interview! First, I would need some basic background information about you. Could you tell me your age, gender, and nationality as well as in which country do you live at the moment?

Thanks, now we'll go to the actual interview questions.

1. Is "spirituality" a word that describes your beliefs and values well?

- If yes, would you like to tell me something about what it means to you?

- If not, what concept describes your beliefs and values better, and could you tell me something about what it means to you?

2. Do you recognize the term "New Age"? If yes, do you think it describes your views on spirituality?

3. Now, let's talk about spiritual mobile applications. What spiritual app (or apps?) do you use on a regular basis?

Co star, Pattern, headspace

(If they use multiple apps, ask these questions for each app)

4. When did you start using this app?

5. What made you download this app?

6. Can you tell me something about why you use this app?

7. Next, I'm going to ask you to tell me something about how you use the app. Firstly, what kinds of features does the app have and how do you use them?

8. How often do you use it?

9. When you open the app, how long do you usually spend on it?

10. Tell me about the last time you used the app. Try to place yourself in that situation and share with me as much detail as you can.

- If you don't remember the last time you used the app, tell me about any recent time you recall

- Prompts: When was this? Why did you use the app? How did you use it? Who were you with? Where were you? How did it feel to you?

Note to the interviewer: Try to understand the situation, the nature of the interaction with the app. Try to get the interviewee discuss the meaning of the app, what it makes them think and feel.

11. Would you say using this app has had an impact on you or your life?

- On your thoughts, feelings, or experiences?

- Has using this app had an impact on your daily habits and/or routines?

12. Has using this app had an impact on your mental wellbeing?

- If yes, which functionalities have been beneficial/detrimental to your wellbeing?

13. Has using this app helped you in your social relationships?

- If yes, which functionalities have been helpful to your social relationships?

14. If you could change one thing about the app, what would it be?

15. How well do you think this app fits with your worldview? Is there something that isn't a fit?

NOTE: IF THERE IS ANOTHER APP TO BE DISCUSSED, GO BACK TO QUESTION 4!

16. Has the use of these apps inspired you to seek additional information on other spiritual practices outside the app?

17. Would you like to add any additional comments?

Appendix D

Ethical approval

UNIVERSITY OF TWENTE.

FACULTY BMS

221430 REQUEST FOR ETHICAL REVIEW

Request nr: 221430
Researcher: Toivonen, H.K.
Supervisor: -
Reviewer: Klooster, P.M. ten
Status: Approved by commission
Version: 2

1. START

A. TITLE AND CONTEXT OF THE RESEARCH PROJECT

1. What is the title of the research project? (max. 100 characters)

User Experiences with Smartphone Apps for Spirituality

2. In which context will you conduct this research?

Academic research conducted by a faculty member

3. Date of the application

02-12-2022

5. Is this research project closely connected to a research project previously assessed by the BMS Ethics Committee?

No/Unknown

B. CONTACT INFORMATION

6. Contact information for the lead researcher

6a. Initials:

H.K.

6b. Surname:

Toivonen

6c. Education/Department (if applicable):

BMS-PGT

6d. Staff or Student number:

77024080

6e. Email address:

h.k.toivonen@utwente.nl

6f. Telephone number (during the research project):

+358407458418

6g. If additional researchers (students and/or staff) will be involved in carrying out this research, please name them:

h.k.toivonen@utwente.nl

6h. Have you completed a PhD degree?

Yes

8. Is one of the ethics committee reviewers involved in your research? Note: not everyone is a reviewer.

No

C. RESEARCH PROJECT DESCRIPTION

9a. Please provide a brief description (150 words max.) of the background and aim(s) of your research project in non-expert language.

This is an exploratory study on the experiences of people who use smartphone applications somehow connected to spirituality (New Age) lifestyle and practices (e.g. Saged, Sadhguru, Spiritual Stories Daily). Me and my co-researcher, Assistant Teaching Professor Tim Gorichanaz from the Drexel University College of Computing & Informatics, are planning to recruit people who are already using these apps and conduct semi-structured interviews with a phenomenological approach. The study aims to understand the role and function the users perceive the apps as having in their everyday life and meaning-making, as well as the connection of the app to their values and worldviews. While there is an increasing number of conceptual studies on modern spirituality and New Age, often from a critical standpoint, there are very few studies focusing on the experiences and perceptions of self-declared spiritual people themselves. Furthermore, while different mobile applications revolving around New Age beliefs and practices are becoming increasingly common, there are no studies investigating the use of these apps and the meanings given to them by the users. The study aims to contribute a) to our understanding of the deeper user experiences of mobile applications with a focus on a group of less known apps and b) to HCI field with a new methodological approach, which combines qualitative narrative analysis of the users' stories to a comparative analysis of the stories told by the apps (researcher construct based on the functionalities, visualities, and text materials included in the apps). Findings of the study will increase our understanding of the interplay of the increasingly common New Age lifestyles with technology use and thus, expand the current understanding of wellbeing applications towards the direction of spiritual wellbeing.

9b. Approximate starting date/end date of data collection:

Starting date: 2022-12-31

End date: 2023-12-30

9c. If applicable: indicate which external organization(s) has/have commissioned and/or provided funding for your research.

Commissioning organization(s):

Not applicable

Funding organization(s):

Not applicable

2. TYPE OF STUDY

Please select the type of study you plan to conduct:

I will be collecting new data from individuals acting as respondents, interviewees, participants or informants.

4. RESEARCH INVOLVING THE COLLECTION OF NEW DATA

A: RESEARCH POPULATION

20. Please provide a brief description of the intended research population(s):

The research population covers adults who have already (prior to the interview) been using any mobile application that they themselves consider spiritual/New Age (some examples are apps such as Saged or Sadhguru). Participants will be recruited using the researchers' own networks, ads on social media, contacting the app developers, and possibly by using the student pool SONA. The participants can be of any nationality and live anywhere in the world, as long as they can participate in an online interview conducted in English or in another language in which the interviewer is fluent (Finnish, Swedish, etc.).

21. How many individuals will be involved in your research?

We expect to include at least 10 and up to 40 interview participants altogether.

22. Which characteristics must participants/sources possess in order to be included in your research?

The participants must be at least 18 years old, able to speak English well enough to participate in an online interview (or native in some other language in which the interviewer is fluent), as well as have used for any period of time any of the various spiritual applications out there. We will recruit participants that have been using an app (or several of them) that the participants themselves define as "spiritual". That is, we will not be pre-defining what spirituality/New Age means or which apps they should have been using. However, people who have only used apps that have to do with traditional religion (e.g., any of the various Christian or Muslim apps) will not be included in the study.

23. Does this research specifically target minors (<16 years), people with cognitive impairments, people under institutional care (e.g. hospitals, nursing homes, prisons), specific ethnic groups, people in another

country or any other special group that may be more vulnerable than the general population?

No

24. Are you planning to recruit participants for your research through the BMS test subject pool, SONA

Yes

B. METHODS OF DATA COLLECTION

25. What is the best description of your research?

- Interview research

26. Please provide a brief yet sufficiently detailed overview of activities, as you would in the Procedure section of your thesis or paper. Among other things, please provide information about the information given to your research population, the manipulations (if applicable), the measures you use (at construct level), etc. in a way that is understandable for a relative lay person.

The study set up is transparent: We will recruit participants that have been using any modern spirituality related smartphone application. The recruitment text will name some examples, such as Saged, Sadhguru, or Spiritual Stories Daily. The participants will take part in a semi-structured interview in an online setting such as Teams or Zoom. The interviews will be recorded. The questions asked will concern 1) the participant's definition and experiences of New Age spirituality and 2) their experiences of using a particular app or apps revolving around spirituality. The interview will start out by asking e.g., "How do you define spirituality?" and "What does "spirituality" mean to you?" and then proceed to more specific app-related questions such as "What app (or apps?) do you use as part of your spirituality?", "How do you use this app?", and lastly, "Tell me about the last time you used the app. Try to place yourself in that situation and share with me as much detail as you can."

How much time will each participant spend (mention the number of sessions/meetings in which they will participate and the time per session/meeting)?

One interview of 30-60 minutes

C: BURDEN AND RISKS OF PARTICIPATION

27. Please provide a brief description of these burdens and/or risks and how you plan to minimize them:

The participant burden is minimized by keeping the interview scheme as concise as possible and by only including questions that are needed to answer the research question. Since some of the interview questions are relatively personal (e.g., concerning their views on spirituality), it cannot be excluded that some participants might feel discomfort about this. To minimize any discomfort, the interview questions are kept relatively open to allow the participants themselves define at what depth they will be answering the questions; by making clear to all participants that they can discontinue the interview at any point without any consequences for them; and by

conducting the interview itself in a sensitive and professional manner. Should any students participate in collecting the data, they will be trained beforehand to make sure they conduct it in the best way possible. In case the participants will feel any psychological discomfort during or after the interview, they are offered the chance to discuss with the interviewer and provided with both the main researchers' (Heidi Toivonen and Timothy Gorichanaz) contact information to be able to contact them later to discuss the interview.

28. Can the participants benefit from the research and/or their participation in any way?

Yes

Please Explain:

The interview is designed to offer the participants an interesting chance to have a reflective discussion on their personal views and lifestyle, from the perspective of their use of spiritual mobile applications.

29. Will the study expose the researcher to any risks (e.g. when collecting data in potentially dangerous environments or through dangerous activities, when dealing with sensitive or distressing topics, or when working in a setting that may pose 'lone worker' risks)?

No

D. INFORMED CONSENT

30. Will you inform potential research participants (and/or their legal representative(s), in case of non-competent participants) about the aims, activities, burdens and risks of the research before they decide whether to take part in the research?

Yes

Briefly clarify how:

The participants will be provided with an information sheet, sent to them by email after they indicated interest in participating in the study. The sheet will explain the aim of the study, how the interview is conducted and what topics will be covered, as well as the participants' rights and how their anonymity will be protected.

32. How will you obtain the voluntary, informed consent of the research participants (or their legal representatives in case of non-competent participants)?

Signed

33. Will you clearly inform research participants that they can withdraw from the research at any time without explanation/justification?

Yes

34. Are the research participants somehow dependent on or in a subordinate position to the researcher(s) (e.g. students or relatives)?

No

35. Will participants receive any rewards, incentives or payments for participating in the research?

- No

36. In the interest of transparency, it is a good practice to inform participants about what will happen after their participation is completed. How will you inform participants about what will happen after their participation is concluded?

- Participants will receive the researcher's contact details, so that they can contact the researcher if they have questions/would like to know more.
- Other (Please specify):
Participants who indicate their interest will receive the final publication(s) written using this interview data.

E. CONFIDENTIALITY AND ANONYMITY

37. Does the data collected contain personal identifiable information that can be traced back to specific individuals/organizations?

Yes

38. Will all research data be anonymized before they are stored and analysed?

Yes

39. Will you make use of audio or video recording?

Yes

- What steps have you taken to ensure safe audio/video data storage?

The videos will be stored in the UT Teams environment, in a Teams folder accessible only to the researchers of the project.

- At what point in the research will tapes/digital recordings/files be destroyed?

After the interview has been fully transcribed into text, the original video will be destroyed.

5. DATA MANAGEMENT

- I have read the UT Data policy.
- I am aware of my responsibilities for the proper handling of data, regarding working with personal data, storage of data, sharing and presentation/publication of data.

6. OTHER POTENTIAL ETHICAL ISSUES/CONFLICTS OF INTEREST

40. Do you anticipate any other ethical issues/conflicts of interest in your research project that have not been previously noted in this application? Please state any issues and explain how you propose to deal with them. Additionally, if known indicate the purpose your results have (i.e. the results are used for e.g. policy, management, strategic or societal purposes).

I do not anticipate any ethical issues or conflicts of interest.

7. ATTACHMENTS

Participant information sheet.pdf, Informed consent sheet final.pdf

8. COMMENTS

9. CONCLUSION

Status: Approved by commission

The BMS ethical committee / Domain Humanities & Social Sciences has assessed the ethical aspects of your research project. On the basis of the information you provided, the committee does not have any ethical concerns regarding this research project. It is your responsibility to ensure that the research is carried out in line with the information provided in the application you submitted for ethical review. If you make changes to the proposal that affect the approach to research on humans, you must resubmit the changed project or grant agreement to the ethical committee with these changes highlighted.

Moreover, novel ethical issues may emerge while carrying out your research. It is important that you reconsider and discuss the ethical aspects and implications of your research regularly, and that you proceed as a responsible scientist.

Finally, your research is subject to regulations such as the EU General Data Protection Regulation (GDPR), the Code of Conduct for the use of personal data in Scientific Research by VSNU (the Association of Universities in the Netherlands), further codes of conduct that are applicable in your field, and the obligation to report a security incident (data breach or otherwise) at the UT.