

Spiritual Mobile App Users and Buddhist Ideologies

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Abstract

Research in the field of the use of spiritual mobile applications and their effect on their users is very limited. Therefore, this research aimed to analyse how spirituality is conceptualised by New Age mobile app users and to what extent it overlaps with Buddhist ideologies. A qualitative approach was utilized by conducting semi-structured interviews that followed a fixed set of 16 questions. 24 participants ranging from 18 to 42 with diverse national backgrounds participated in the conducted interviews. The participants were selected on the basis of whether they are active users of spiritual mobile applications. Thematic analysis was used to analyse the data extracts of selected interviews. The final analysis concluded with five individual themes. The participants reported on practicing spirituality in the form of mindfulness and the exercises that are provided by their spiritual app of choice. Results of this study show that spirituality is conceptualized as religious by some of the participants and non-religious by other participants. Detailed results are discussed further with possible limitations as well as useful directions for future research.

Keywords: Spirituality, Mobile Apps, Mindfulness, Buddhism, Conceptualization

Spiritual Mobile Application Users and Buddhist Ideologies

Spirituality is becoming increasingly significant in the West, as the interest in anything self-help or spiritual is growing in the market (Rindfleish, 2005). Spirituality has been defined by Whitehead and Bergeman (2011), as a “feeling of God, feeling touched by the beauty of creation, having a sense of inner peace and harmony” (p. 456). Other times, spirituality has been considered a lifestyle for some, a philosophy, a way of life, or a religion (Maher & Hunt, 1993). In this paper, the term “spirituality” encompasses any lifestyle or belief system that incorporates, to some degree, a belief in the divine or supernatural, with a particular focus on personal growth and development (Waaijman, 2002). Especially when it comes to definitions of spirituality, often times terminology and concepts of Eastern religions have been borrowed and adjusted, turning it into a westernized practice (Rindfleish, 2005). Still, spirituality acts independently from religion and not everything that is religious needs to be spiritual (Maher & Hunt, 1993).

There has been a rise of interest in spirituality in the last few decades with the New Age movement making up a significant portion of Western spirituality (Houtman & Mascini, 2002). New Age has been seen by researchers as a religion that mixes and combines different ideas and concepts from other spiritual practices (Aupers & Houtman, 2006). There are two central ideas that make up New Age spirituality, namely a heightened sense of consciousness and spiritual transformation (Melton, 2023). When following consciousness altering practices such as meditation, the individual would increase their sense of awareness which would result in spiritual transformation, allowing the individual to follow a new path with cultivates growth within the individual (Melton, 2023). Through the rise of New Age spirituality, a rise in interest occurred in anything related to self-help or self-development (Rindfleish, 2005).

Through the rise of interest in spirituality and New Age, digital interventions have taken on the task to offer spiritual practices for the users' consumption. Spiritual mobile apps are mobile applications that facilitate a sacred space for spiritual or religious use which can be used as a tool to build a deeper connection with one's spiritual practices (Campbell, 2005). Through the rise of interest in self-help and New Age, digital interventions have taken on the task to offer spiritual practices for the users' consumption. Through the normalization of using one's mobile phone for more and more daily tasks, using mobile applications for tasks such as checking one's daily tarot card, have reached popularity (Laurie & Blandford, 2016). And since certain spiritual practices may be less accessible to some, mobile device applications are not only cost-effective but also for a certain group of people the more convenient choice (Laurie & Blandford, 2016).

There are more than six thousand mobile apps available for download alone in the App Store (Ahmad et al., 2013). Some spiritual mobile applications base their practices and ideologies on astrology and psychology. Some examples of these apps are *The Pattern*, *Moonly*, and *Co-Star*. *The Pattern* app is about "helping you to feel seen and understood & connect with others on a deeper level". The *Moonly* app makes clear through their website that their mission is all about "simplifying the basic principles and tools for the development of the soul". *Co-Star* is known for its insights into astrological concepts and its depiction of "the mystery of human relations through NASA data and biting truth".

An example of this rising interest in Spirituality is the increased popularity of mindfulness in the last few years (Hyland, 2017). Mindfulness developed originally from the traditional religion Buddhism and flourished into a "no religion" practice (Drage, 2018). It is a series of mental training to cultivate a more balanced lifestyle and relationship with one's environment (Drage, 2018). Whereas according to mindful.org, an organization promoting

and teaching mindfulness, mindfulness is considered a type of meditation where momentarily awareness is the key without reactions (Mindful Communications & Such PBC, 2023).

Spirituality or spiritual acts can often be mistaken as mindfulness activities as mindfulness is closely tied to anything that supports the individual in their self-development journey; the focus of new age spirituality (Aupers & Houtman, 2006). Mindfulness-based interventions gained a lot of popularity rapidly which was noted by Jon Kabat-Zinn. However, some scholars have criticized those mindfulness-based intervention and called it the “McMindfulness” phenomenon (Hyland, 2017). Hyland (2017) describes “McMindfulness” as a version of mindfulness that concerns the ignorance of the ethical basis of meditation practices and traditions mindfulness originates from.

As previously mentioned, mindfulness has been derived from the traditional religion Buddhism (Drage, 2018). However, it is still debated on whether Buddhism counts as a religion or rather a lifestyle (Tomalin et al., 2007). Buddhism begins with its first teaching on suffering also known in Sanskrit as “duhkha” (Teasdale & Chaskalson, 2011). The suffering that every individual experiences is due to the desires for physical or mental needs such as any form of pleasure and satisfaction (Tomalin et al., 2007). In order to overcome suffering, namely “duhkha”, the Buddha has proposed practices that can help with limiting the emergence of desires (Tomalin et al., 2007). These practices range from mindfulness exercises of any kind to concentration which is known as meditation (Piermarini, 2019). Nowadays, there are lots of different meditation practices for various situations. One of the rather traditional meditation practices is loving-kindness, where an individual learns to show themselves and others compassion (Feldman, 2017). It is a form of showing acceptance towards oneself and everything else around the individual that helps promoting less suffering (Feldman, 2017). If someone wants to advance their practice in meditation, they can continue with implementing non-duality, namely “advaya” in Sanskrit (Mishra, 1988). However, as

this practice is rather advanced, meditation to cultivate compassion is most commonly used. Especially in regard to mindfulness practices, the field of positive psychology has utilized meditation as a way to promote well-being (Kabat-Zinn, 2003). Not only in positive psychology but also in spiritual mobile applications, guided meditations have been a popular choice of content that is accessible for its user.

In the field of positive psychology, the practice of mindfulness has been advocated for by psychologists and psychotherapists since at least the early 2000s to enhance one's mental well-being (Kabat-Zinn, 2003). It started with Kabat-Zinn's Mindfulness-based Stress Reduction (MBSR) programme in 1979 and by the end of the 90s it skyrocketed based on the number of studies that were done on the effects of MBSR and related cognitive therapy (MBCT) on various types of addictions, anxiety and patients with chronic pain (Hyland, 2017). Mindfulness practices include breathwork, body scans, and emotional awareness for instance (McCown, Reibel, & Micozzi, 2011) which have been therefore added to some spiritual mobile applications ultimately merging mindfulness practices with spirituality. Furthermore, mindfulness has become a more and more researched topic in clinical psychology (Hyland, 2017).

There have been several quantitative approaches developed to measure one's spiritual well-being. One of them includes the previously mentioned mindfulness-based cognitive therapy, another variant of cognitive behavioral therapy, which has gained popularity along with MSBR (Hyland, 2017). Primarily, spirituality is used as a coping mechanism for factors such as perceived stress and the effects of their practices on one's well-being (Taren et al., 2015). Research by Whitehead and Bergeman (2011) also showed a significant effect of everyday spiritual experience and how it acts as a buffer against any negative effects of perceived stress in terms of daily mood.

However, there is still a major gap in research in regard to the use of spiritual mobile applications (Buie & Blythe, 2013). Research in the field of psychology mainly focuses on self-regulation techniques' effect on the individual (Hyland, 2017). These entail meditation, movement meditation such as yoga, and breathing exercises (Daudén Roquet & Sas, 2018). These, however, are also considered to be mindful applications and any mobile application that uses these techniques has been researched only quantitatively. To the author's knowledge, at the time of writing this thesis, there were no qualitative empirical studies on spiritual mobile applications.

Therefore, the focus of this paper will be to explore the usage of spiritual mobile applications with a qualitative approach. Furthermore, this research will answer the question on how spirituality is conceptualised by spiritual app users and how much the conceptualisations are drawn from Buddhist terminology. As there is limited research available on this topic, the target group encompasses anyone using a mobile application for spiritual purposes. If an individual does not identify as spiritual or believe in anything spiritual, they are not part of the target group. Additionally, it is not strictly necessary for a mobile app to market itself as spiritual as long as the participants' used app is utilized for spiritual purposes. Another result of the limited research available is the decision to conduct this study qualitatively to gain a deeper understanding of the effects of spiritual mobile apps on their users.

Methods

This study examined how spiritual mobile applications are used by its consumers. The interviews were conducted collectively as a group of five students. In this paper, the aim is to analyse how spirituality is conceptualized by spiritual app users and how much the conceptualizations are influenced by Buddhist terminology.

Study Design

In this research, a qualitative design with semi-structured in-person and online interviews was implemented. In total, 24 individual semi-structured interviews were conducted following a fixed set of 16 questions which can be found in Appendix 2. Furthermore, additional follow-up questions were asked to ensure a better understanding. The author of this thesis conducted a total of six interviews.

Participants

For this study, 24 participants were gathered via both the Sona Credits System that the University of Twente (UT) uses as well as outside of the University. The Sona Credits System is a student participation pool that is provided by the University of Twente. Additionally, Social Media networks such as WhatsApp and Instagram were used to recruit several participants.

The participants were young adults aged 18 to 42. Of the 24 participants, eight were male, 15 were female, and one individual identified as non-binary. To participate in this study, participants needed to fulfil the inclusion criteria. These include that the participants are regular users of spiritual mobile applications. In total, 5 participants were Dutch, 12 indicated being German, and seven indicated belonging to seven other nationalities. Lastly, the participants were credited with 1.5 points if they signed up via the Sona System for participating in this study. For the remaining participants, that were recruited outside of the Sona System, no incentives were given for participation in this study.

In this study, 12 interviews out of the 23 were selected for further analysis. The participant's age ranged from 20 to 42 with five of the participants identifying as male and

the remaining seven as female. In total, the majority of participants were German, and the remaining participants represented five different nationalities.

Material

Participants were recruited using the online BMS test subject SONA System of the University of Twente (UT) and the personal networks of the students and the supervisor. Voluntary participants who identified as relatively regular users of spiritual mobile applications were recruited. Before conducting the interview, participants signed a consent form (see Appendix 1). The consent form states that participation in this study is voluntary, and that any identifiable information will be anonymized as well. All data will be treated confidentially, and the participant can stop the interview at any time. The interviews were conducted both online via Microsoft Teams or in person. The interview transcriptions were created with the use of Otter.ai, a website aiding in creating transcripts after uploading the audio. Furthermore, the transcripts were manually checked for correctness and readability.

The interview followed an interview protocol that was developed as a joint effort with first supervisor Heidi Toivonen from Psychology, Health and Technology at the University of Twente, and Assistant Teaching Professor Tim Gorichanaz from the College of Computing and Informatics at Drexel University. The conducted interviews are meant to be used later in a research paper by Heidi Toivonen and Tim Gorichanaz. The interview protocol consisted of numerous questions regarding the experience of spiritual apps for their users. These questions covered areas such as the participants' view on spirituality, e.g. "Is 'spirituality' a word that describes your beliefs and values well?" and their use of the app in question "Can you tell me something about why you use this app?". Additionally, the ending questions are related to the participants' emotional and behavioural changes throughout their use of the app, e.g., "Would you say using this app has had an impact on you or your life?". Data relevant to the research

question of this paper were most abundant in answers to question number 16 “Has the use of these apps inspired you to seek additional information on other spiritual practices outside the app?”. However, the participants provided meaningful data also in other parts of the interviews.

Procedure

This study was approved by the Ethics Committee from the Faculty of Behavioural, Management, and Social Sciences (BMS), Domain of Humanities and Social Sciences (HSS) of the University of Twente (Application number: 221430) which can be found in Appendix 3. The procedure consisted of recruiting participants through the SONA system as well as asking for participation on the researcher’s social media accounts such as Instagram and WhatsApp. Every participant that signed up for the study was informed about the study with the participant information sheet which can be found in Appendix 4. All participants needed to sign the consent form (see Appendix 1) prior to the interview. After having received the consent of the participant, the interview was conducted following the interview protocol (see Appendix 2). All interviews were audio and video recorded. Upon finalizing the interview, the participation credits were awarded via the SONA tool if the participant signed up via SONA.

Data Analysis

Transcriptions

In order to analyse the data, every recording of the collected interviews was transcribed by the researchers. The author of this paper conducted and transcribed six interviews. As an aiding tool, the website Otter.ai was utilized. Lastly, the transcripts were manually edited to ensure correctness and readability.

Thematic Analysis

The collected data was analysed using Thematic Analysis (Braun & Clarke, 2006). Thematic analysis is used to discover meaning-making patterns to understand how the participants of this study conceptualized spirituality with the influence of Buddhist terminology. Clauses or sentences were used as the unit of analysis which were previously finalized. The data analysis process was based on the six steps that were developed by Braun and Clarke (2006):

1. Familiarising yourself with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Firstly, each interview was read through multiple times, while paying attention to how participants conceptualized spirituality. The transcripts have been further analysed with an inductive-deductive approach. This involved everything from specific apps the participants used and practices they have implemented. Following Braun and Clarke's (2006) steps of analysis, the next step involved generating initial codes. Buddhist concepts were used as a foundation to generate codes that were based on conceptualizations that came close to Buddhist terms. An example for buddhist terms would be suffering also known in Sanskrit as "duhkha" which has been referred to by a participant in the theme of *Motivations for adopting Spiritual Digital Tools for Personal Development* (Teasdale & Chaskalson, 2011).

The third step involved the search for themes (Braun & Clarke, 2006). The generated codes have been grouped into meaning making patterns which possessed similar core ideas.

However, a code is not “bound” to belong to one theme only. Codes can be part of two or more themes at times. The following data extract is an example for representing two different codes namely *Calmness* and *Being Present* within the same theme which is *Practice of Mindfulness*: “I feel way more calm and kind of fulfilled” (“Jade”), “Mindfulness means being here now” (“Maya”).

The aforementioned extract represents the theme *Practice of Mindfulness*. The core meaning for *Practice of Mindfulness* is the implementation of practices that are considered as mindful or the experience of feeling mindful. It is shown that themes contain patterns of meanings that were found when analyzing how participants discuss spirituality.

Each of the themes have been reviewed and modified throughout the analysis. It has been ensured that the themes are related to the data extracts and codes that have been generated. The following sections provide an overview of all the themes with their corresponding codes. The themes are followed with quotations of the participants. Each participant has been assigned a pseudonym and data extracts have been edited to ensure their confidentiality. The final analysis concluded with five individual themes.

Results

The participants of this study used numerous spiritual mobile applications namely: Balance, Calm, Headspace, Meditation Moments, Mindspace, Moonly, Plum Village, Sadhguru, Saged, Sanvello, The Pattern, and Waking Up. Six out of the 12 mentioned spiritual mobile apps, namely Balance, Calm, Headspace, Meditation Moments, Mindspace, and Sanvello, are focused on mindfulness practices in the form of meditation. They offer several guided meditations for stress, anxiety relief, sleep, and wellness (balanceapp.com, calm.com, headspace.com, meditationmoments.nl, mindspaceapp.com, sanvello.com). Two of the mentioned apps, specifically The Pattern and Moonly, are based on astrological events

(thepattern.com, moonly.app). Saged provides the user with daily rituals and oracles that incorporate gratitude practices, astrology, and affirmations (sagedapp.com). Furthermore, the community aspect of Saged allows its users to connect and share their thoughts and ideas on any topic (sagedapp.com). The Plum Village app is marketed as a monastery for the on-the-go. The app provides consumers with guided meditations, and mindfulness practices to cultivate compassion and joy. The app is practice-oriented based on the Buddhist tradition offered by Zen Master Thich Nhat Hanh (<https://plumvillage.org/mindfulness/mindful-apps/>). Also, the Sadhguru app is oriented on the practices provided by the Yogi Sadhguru. Users have access to various videos, guided meditations and mudras, as well as yogic practices (<https://isha.sadhguru.org/in/en/sadhguru-app>). Lastly, the Waking Up app is an application for meditation practices that are more traditional, with a foundation in Buddhism and Neuroscience providing the user with mindfulness practices (wakingup.com).

As can be seen in Table 1, five different themes were created which all relate to how participants conceptualized spirituality. The main themes were ordered from highest to lowest occurrences and are cross-data relevant.

Table 1

Themes Relating to Conceptualizing Spirituality

Main Themes	Explanation of Theme	Codes included	Buddhist Concept present?	Use of Apps?	n
1. Practice of Mindfulness	Either the feeling of being mindful or practising mindfulness	- Feeling grounded - Self-care - Calmness - Being present	no	yes	63

		- Sense of awareness - Experiencing gratitude				
2. Intrapsychological Spirituality	An individuals' mental practice and how they internalized spirituality in their minds	- Contemplative experiences - Any form of meditation - Mind-body connection - Loving-kindness towards oneself and others - (non)duality - Awareness of one's mortality - Awareness of one's internal states	yes	yes	62	
3. Embodied Rituals	Any physical form of spiritual practice that involves either the physical engagement of the individual or the use of	- Going on retreats - Prayers - Breathing Exercises - (Guided, silent, meta, vipassana, mountain) meditation - Practicing yoga	no	yes	55	

	external sources	-	Listening to chants, spiritual talks, and dharma talks			
4. Individual and Collective Connectivity	Experiencing a sense of connectivity with the individual sense of self or collectively with others	-	Mind-body connection Connecting to their true self Going inward Feeling connected to others	no	yes	51
5. Motivations for adopting Spiritual Digital Tools for Personal Development	The reason or circumstance that inspired the individual to seek out for spiritual apps/resources for personal growth	-	Psychological/mental suffering Feeling disconnected Having a busy life Experiencing stress General interest or just for fun To establish a routine Convenience of the app	yes	yes	27

Note. If participants mentioned buddhist concepts in a specific theme, this will be indicated in the table with a yes or no respectively. Similarly, if participants mentioned the use of spiritual mobile applications within a theme, this will also be indicated with a yes or no.

As shown in Table 1, the theme of *Practice of Mindfulness* was the most frequent with a total of 63 occurrences. This was followed by the themes *Intrapsychological Spirituality* with 62 occurrences, *Embodied Rituals* with 55 occurrences, and *Individual and Collective Connectivity* with 51 occurrences. The least frequent theme was *Motivations for adopting Spiritual Digital Tools for Personal Development* with 27 occurrences.

Practice of Mindfulness

The theme with the highest frequency was the theme *Practice of Mindfulness*. This theme explores the feeling and experience of being mindful and how participants make use of mindfulness practices in their everyday lives. A range of different approaches of mindfulness are manifested in the participants lives, namely self-care practices, gratitude exercises, and embodying a sense of feeling grounded. No Buddhist concepts were mentioned by the participants as a basis for these mindfulness practices. However, participants mentioned that they used spiritual mobile applications such as Headspace, Calm, and Waking Up to support their mindfulness practices. Participants described that mindfulness practices provided by spiritual apps allow them to experience a sense of “groundedness”, promoting calm and being free of tension. As one of the participants puts it:

“Paul”: But this was the feeling I felt now was more like, very calm, very calm and spacious. And free of tension. Very free of tension. Yeah. I was just like floaty, I felt grounded. But at the same time, there was no resistance inside of me.

Feeling grounded was closely tied to allowing the users to be present and be in the “here and now”. The guided meditations offered by apps like Headspace were a popular choice among the participants. One of the participants states that the muscle relaxation

techniques and mountain meditation helped her in achieving an overall state of more peacefulness.

Practising self-care was seen as another form of mindfulness. Taking the time to listen to one's needs and state of mind allowed the participants to not only connect to themselves more deeply but also be present. "Charlotte" explains in her interview that "Spiritually gives me trust in something and also trust for myself, that, that I am on the right track in my life and a sense of self-care". It was like creating a mental checkpoint for the users to sit with themselves and go after the mental or physical practice to cultivate the form of mindfulness that fits their needs. Furthermore, being present was discussed as fostering the individual with a sense of awareness as "Jackson" voices: "Living in the present moment, but not only living in the present moment, also being aware of it, aware of how you're reacting to interactions with other people, to things that are happening to you and everything". What Jackson states was common between what other participants mentioned both within as well as outside of this theme. The presence that not only he is referring to is accompanied by a feeling of awareness towards everything within and outside the individual. Like he states, interactions with other people and being able to follow these interactions with awareness counts as being present.

Intrapsychological Spirituality

Within this theme, the participants discussed several different practices that can be considered an individual's understanding of spirituality. There were several instances where participants reported a sensation, a specific term, or practices that are derived from traditional religions such as Buddhism. Participants talked about the Buddhist concept of loving-kindness or non-duality. Both English terms can be found as an existing concept in Buddhist terminology as "maitrī" and "advaya" in Sanskrit respectively ("Mettā," 2022; Mishra, 1988).

Participants mentioned within this theme several spiritual mobile applications such as the Plumvillage app, Sadhguru app, and Waking Up which are used as a spiritual tool.

Contemplative practices in the form of meditation were frequently mentioned. These meditations can be guided and range from body scans to vipassana meditations but do not necessarily need to be guided. One participant, Jackson, mentions that spirituality for him is more of a personal practice which is based on his personal beliefs. Spirituality is more about how life is perceived through each individual lens which is what makes spirituality for Jackson more personal. Especially when turning inward, the same participant explained that it is important to not be in denial but heighten one's awareness towards the happenings in our mind: "it's not that you're trying to repress those thoughts, it's more like, giving them short attention and let them go by" (Jackson). It is crucial for the participants that practice spirituality through meditation to understand that one should not fixate on their thoughts. The process that Jackson describes is common practice during meditation. The goal is to be present which is best achieved by taking a step back and start observing one's thoughts. "Antonio" reported that meditation is not about trying to stop one's thought flow but rather to "just go back to observing it instead of being entangled into it".

Some individuals stated that spiritual practices allowed them to experience more compassion towards themselves. In any form of spiritual practice, whether those are gratitude exercises or guided meditations, the app users can learn how to accept themselves and their present state. Participant "Joe" talks about how most of the meditations from the Plum Village app that he is using, are based on love and compassion: "There's also lots of meditations on loving kindness and, well, honest communication and yeah. So even if you're on the meditation on the app yourself, it's all about connecting to others and stuff" (Joe). The participant here is talking about a concept that is close to the Buddhist concept of loving-

kindness also known in Sanskrit as “maitrī” (“Mettā,” 2022). It is all about showing compassion not only towards oneself but also towards others, that promotes reaching a state of acceptance towards one’s present state of mind (“Mettā,” 2022). This state of acceptance towards oneself can be emotional at times. For participant “Lena”, this experience is memorable: “It was like a moment where I feel like I was able to accept what I was feeling for like one of the first times. And after feeling bad for such a long time, that was like a very healing experience”.

Participants that follow the practices from more traditionalist-oriented spiritual mobile applications, meaning on a basis of Buddhism or Hinduism, such as Waking Up and the Sadhguru app, mentioned duality or rather non-duality. Non-duality encompasses conventional thinking patterns which are distinctions between good and bad. Non-duality, however, is rather the approach of finding a middle way, so the in between or “grey” area between black and white thinking (Mishra, 1988). During their journey of mental self-discovery through meditation, one participant mentioned that he came across Dzogchen, an Indo-Tibetan strain of Buddhism. He explained that:

Paul: The traditional Dzogchen masters, they usually reserve these techniques for later in the practice. When the meditator has more concentration, more insights and sort of like, is firmly rooted already in his practice, I guess I did feel that tension, definitely in the beginning where sometimes I felt mindfucked literally.

Dzogchen meditation practices implement the Buddhist concept of non-duality, also known in Sanskrit as “advaya”, which is regarded as an advanced practice of meditation (Mishra, 1988). Outside of meditation, the concept of nonduality was mentioned by another individual that has implemented this mindset into his day-to-day life. When asked whether

his use of the Sadhguru app has impacted his social relationships either positive or negative, he responded with: “We can say again, we cannot discriminate it in a way it's good, bad” (“Sebastian”). Here, Sebastian made clear that his way of thinking does not progress in black or white thinking but rather taking everything as is.

Embodied Rituals

Within the theme of *Embodied Rituals*, participants discussed that they were using different external sources for their spiritual practice such as yoga, breathing exercises, prayers, and retreats. Hence, any form of spiritual practice that involves either the physical engagement of the individual or the use of external sources is relevant. Some of these external practices are used by participants in a routinely manner. Even though, participants did not mention any Buddhist concepts within this theme, the practice of Yoga has a substantial overlap with certain Buddhist practices. This theme occurred when the participants were discussing that they made use of the spiritual app Headspace and the Sadhguru app respectively.

Some participants state that they liked to practice yoga either as an additional form of spiritual practice or as the only source of spiritual practice: “Even on weekends, I wake up and the first thing that I do is yoga for a while and then meditate with Headspace” (Jackson) or by joining group yoga lessons like for participant Maya: “And another thing I did was or still is yoga. sometimes just on my own or I am watching a tutorial, or I join group yoga lessons”. Unlike most of the individuals that established yoga to be part of their spiritual practice, one participant practices the “simplest types of Yoga” which is regarded as the Four Paths of Yoga in Hinduism (Pandey & Navare, 2018). Some forms of meditation such as walking or breathing meditation are part of the user’s practice too. Meditation practices are either being followed as part of a programme or routinely either first thing in the morning or

last thing in the evening as part of their sleep hygiene like participant Lena elaborates: “it's kind of like a small exercise where you do like a breathing exercise at the beginning, and then after that, um, a person will start telling a story and then that, yeah, helps you fall asleep”.

For other participants, spirituality is embodied by going after their prayers. One individual, Sebastian, his conceptualization of spirituality involves the practice of religious activities such as praying at his altar regularly. He explains:

Sebastian: My day starts with my altar. I do light my candles in my altar three times a day, morning, afternoon and night. So I do switch on some chants while I start with my altar and my prayers, or during the day, depending on the mood.

Additionally, he likes to implement content that is available to him by spiritual apps into his day-to-day life. It is important for him to be practicing and going after his prayers during his day. He further mentioned that he likes to make use of the Dharma talks and chants of his spiritual app of choice.

Nevertheless, other individuals reported that they have implemented meditation techniques they picked up from attending retreats into their spiritual practice. These include silent retreats for a seven-day period, which are usually basing their meditations on Buddhist ideologies. Paul mentioned:

Paul: And then I went to my first retreat last summer. And since then, I, I took a long break, just because I was doing my own meditation. So basically, the body scan that they taught us at the retreat, I've been just meditating with that.

Individual and Collective Connectivity

Spirituality is closely tied to a sense of connectedness either on an individual or collective level. Within the theme of *Individual and Collective Connectivity*, participants repeatedly mentioned that spirituality allows them to connect to themselves and others more in-depth. On an individual level, participants were able to reach this level of connectivity by reflecting on their own needs, wants, and their current emotional and physical state. In a collective sense, participants experienced a sense of connectivity with friends and family, at times also humanity as a whole. No connection to Buddhist concepts were made by participants, however, spiritual mobile apps such as Headspace and Saged are taken advantage of within this theme.

Furthermore, learning to embrace the connections they have with other individuals or establishing new connections became important too. In the context of the aforementioned spiritual mobile applications, the content provided within these apps such as guided meditations is seen as a tool that further deepens the relationship with oneself. Allowing the participant to understand their behaviour patterns better and their position in relation to the world and society as a whole. For participant “Luna”, spirituality means awareness and how she described it in the interview it is specifically “of the world around me and of myself as an individual in this world”.

Additionally, spirituality is established to be a sensation that is difficult to measure as it is tied to the sense of connection one experiences towards oneself and others. Participants explained that the feeling is more emotional than rational, and can be experienced especially by becoming conscious and aware of the relationship between their mind and body. As participant “Naomi” put it: “One of my beliefs is that my mind and my body, are connected

to each other so, what I do to my body is also what I do to my mind and how to, how I umm, think about things and what my attitude towards is”.

Motivations for adopting Spiritual Digital Tools for Personal Development

Within this theme, the circumstances that inspired the individuals to seek out digital tools such as spiritual mobile applications to engage with it for their spiritual growth are involved. This theme explores the motivation of the participants that led them refer to these resources for support and inspiration. The motivation ranged from general curiosity and personal challenges such as stress and mental suffering. The Buddhist concept of suffering, namely “duhkha”, was touched upon. The spiritual mobile applications Mindspace and Calm were referred to by participants.

Numerous participants stated that they had a reason that made them download a spiritual mobile application. Some mentioned that the reason why they referred to the use of meditation or mindfulness-based apps was that they experienced psychological or mental suffering. Participant Paul explains that he experienced suffering, especially mental suffering, and his way to decrease his suffering was through meditation. He explains: “In the beginning, I was suffering, just straight up suffering. Like, I don't want to suffer anymore, so I guess I just meditate. And it helped”.

The participant here is talking about experiencing a state of suffering in a manner that comes close to the Buddhist concept of suffering also known in Sanskrit as “duhkha” (Teasdale & Chaskalson, 2011). Suffering has been the result of ignorance and desire which, however, can be prevented by the practice of meditation as the participant states (Teasdale & Chaskalson, 2011).

Experiencing heightened stress levels and generally living a busy life did not stop users from taking care of their mental wellbeing. Some participants mentioned that they started using the exercises from spiritual mobile applications to increase their overall mental well-being. Some went as far as to establishing a routine with the offered guided meditations on apps such as Mindspace and Calm which supported them in being present and able to cope with any discomfort. Participant Charlotte describes how the use of spiritual apps was helping her with managing the experienced daily stress: “The app helps me to just take a break from daily things [...] and meditating then makes me less stressed, as I give myself this break from the day and I can handle the stress better”.

Discussion

This research aimed to analyse how spirituality is conceptualized by spiritual app users and how much the conceptualizations are drawn from Buddhist terminology. Five different themes related to conceptualising spirituality were created. These themes include the *Practice of Mindfulness*, *Intrapsychological Spirituality*, *Embodied Rituals*, *Individual and Collective Connectivity*, and *Motivations for adopting Spiritual Digital Tools for Personal Development*.

The theme *Practice of mindfulness* encompasses the feeling and experience of being mindful especially manifested through practices that are considered mindful. This theme explores how participants engage with mindfulness in their day-to-day life. No Buddhist terminology was referred to by participants. However, grounding exercises from the spiritual mobile application Calm were made use of. Individuals have been practising mindfulness in different ways to promote their sense of awareness regarding themselves. These practices range from self-care to gratitude exercises. As it has been previously mentioned in the results, individuals report on the sensation of “groundedness”, or rather feeling grounded which has

been the result of practices that promotes being present. Being free of tension was the consequence for many participants that practice mindfulness. Overall, the exercises that are promoted in mindfulness based spiritual apps made the participants aware of their needs as an individual, but also start appreciating the people and things they have in life. Especially gratefulness exercises supported their appreciation and feeling of thankfulness.

The theme *Intrapsychological Spirituality* includes any form of mental practice of an individual which showcases how they have internalized spirituality in their minds. There were several instances where participants reported a sensation, a specific term, or practices that are derived from traditional religions such as Buddhism. Participants talked about the Buddhist concept of loving-kindness or non-duality. Both English terms can be found as an existing concept in Buddhist terminology as “maitrī” and “advaya” in Sanskrit respectively (“Mettā,” 2022; Mishra, 1988). These are not the only instances where individuals refer to terminology that stem from Buddhism. The individuals reported that their practices are based on meditations that are sometimes guided but do not need to be. Here, vipassana meditations have been mentioned frequently which is a form of meditation that focuses on observing oneself internally and creating a sense of awareness towards the mind-body connection (*Vipassana Meditation*, n.d.). This also involves showing compassion towards oneself as its being described through the Buddhist concept of loving-kindness. Again, the individual is going after practices that raise their awareness but here it focuses on their internal states.

The theme *Embodied Rituals* is compared to the previous theme more focused on an active shape of practice. Any physical means of spiritual practice that involves either the physical engagement of the individual or the use of external sources such as apps, retreats or videos fall into this category. Participants reported on practicing yoga by using spiritual mobile applications as well as outside of their application of choice. It was not the application

per se that has inspired the individual to practice yoga. Often times the participants mentioned that they have already practiced yoga before they started using a spiritual application. Or they have included breathing exercises into their daily practice as a way to calm their mind. Both of these practices are also present in the traditional Hindu religion. The Yoga Sutras of Patañjali include both practices in which the physical execution of mindful movements is referred to as “āsanas” and breathing exercises as “pranayama” (Iyengar, 2002). When participants talked about yoga, they referred to the practice of “āsanas” which stem from the Hindu practice of Yoga.

The theme *Individual and Collective Connectivity* is straightforward: Participants have mentioned a sense of connectivity both collectively and individually. Headspace and Saged were referred to by participants when discussing what apps helped them in experiencing the sensation of connectivity. Exercises such as guided meditations and the general access to community posts are seen as tools that support the consumer with creating a sense of awareness. Specific exercises of these apps were not factors that promoted connectivity. It is the awareness and understanding that followed consequently after a spiritual exercise that increase the connectivity with either the individual themselves or collectively. Individually, practices allowed participants to cultivate an understanding towards how their mind affects their body and vice versa. In a collective sense, participants experience a heightened state of awareness towards their interactions with other individuals. Their spiritual practices have helped them in deepening their connection to both themselves and others. Again, spiritual practices from spiritual mobile applications are used to promote awareness for their connectivity.

The theme *Motivations for adopting Spiritual Digital Tools for Personal Development* considers the reason or circumstance that inspired the individual to seek out spiritual apps or

resources for spiritual and personal growth. Spiritual apps that were commonly mentioned were Calm and Mindspace. Their reasons behind why they started seeking out spiritual mobile applications ranged from general interest to challenging life events such as experiencing heightened stress levels. Several participants have reported that their reasoning for the use of spiritual apps, such as Mindspace and Calm, has been that of mental suffering. Their suffering can manifest itself in different ways, where for one individual it has been in the form of experiencing anxiety and for the other it was more in the form of stress. One participant particularly was talking about experiencing a state of suffering in a manner that comes close to the one portrayed in Buddhism known as “duhkha” in Sanskrit. This form of suffering involves a wide range of sensations such as emotional or physical pain where something is considered as more painful for one is less painful for the other but in the end, it is a universally shared experience (Teasdale & Chaskalson, 2011).

The results of this study show numerous perspectives of the participants when it comes to their understanding of spirituality and their application of spirituality onto their lives. Similar to the different conceptualizations of spirituality by participants, research offers different definitions of their understanding of spirituality. According to Delgado (2005), spirituality has been defined as a “transcendental relationship with something greater than the self” and compared to Maher & Hunt (1993), spirituality is considered a lifestyle for some, a philosophy, a way of life, or a religion. Both of these definitions are different from each other encompassing two different approaches to spirituality completely. Some saw it as more religious rather than a stand-alone lifestyle/mindset or did not know how to answer at all. There have been general differences in the participants’ understanding of spirituality. It has been repeatedly stated by participants, that they do neither identify themselves as a religious person nor part of any religion and that spirituality stands outside of religions. It is not seen as a religion and the distinction has been made on the basis that spirituality is personal and

individuality-based rather than a set of frameworks that a community follows. As one participant explained it well in his own words “It’s like being religious without being religious” (Paul). Furthermore, as Legere (1984) has explained in their paper, spirituality has nothing to do with religion and is rather an individualistic and subjective experience, which was similar to how participants of this study conceptualized spirituality.

The outcome of this research has shown that spirituality has been conceptualised as both something religious and non-religious. Although there have been instances where participants mentioned Buddhist or Hindu concepts, that group of individuals can be separated into two: the group of people that are aware of the Buddhist and Hindu background of their spiritual practices and those who are not. Participants that base their practice on Buddhism and call it spiritual are aware of the concepts being derived from the traditional religion. These concepts involve Sanskrit terms such as “maitrī” and “advaya” namely in English loving-kindness and non-duality (“Mettā,” 2022; Mishra, 1988). The other group of individuals practice spirituality without connecting their practices to the Buddhist or Hindu roots of their practice as shown in the following example. The practice of “āsanas” and “pranāyāma”, namely the physical movements in yoga and breathing meditation are mentioned frequently (Iyengar, 2002). These practices are derived from Hinduism. Even though Yoga is directly connected with the traditional religion Hinduism, there is substantial overlap with some Buddhist strains.

This research focused on how spirituality is conceptualized by spiritual app users and its connection to Buddhist ideologies. Since there are various interpretations on spirituality already, the goal of this study was to contribute to further deepen the understanding of the public’s perception of spirituality. It can be concluded that the conceptualization is both seen as a religious practice for some and a non-religious practice for others. Substantial overlap

with Buddhist concepts in the conceptualization of spirituality is present with awareness of it by some of the participants. The themes *Intrapsychological Spirituality* and *Motivations for adopting Spiritual Digital Tools for Personal Development* made it especially clear that Buddhism is involved when conceptualizing spirituality. Additionally, all themes underlined the participants active use of spiritual mobile applications for both spiritual as well as mental health related reasons.

This study has a sample of mostly female participants which is subject to gender bias. Especially, when taking into account that the sample size is rather small, transferability is of concern as the focus of this sample was to reach out to individuals that already had some experience with spiritual mobile applications. Lastly, the judgement of the collected data and its interpretation is based on the experiences of this papers' researcher, hence it is more likely that confirmation bias is involved.

Spirituality as a topic of study is still very early in its development, therefore, it is crucial to dedicate more time and resources to understand the roots of how individuals conceptualize spirituality. Not only is the definition of spirituality still debated, but researchers still know very little in this area generally. In the field of psychology, research has mainly focused on self-regulation techniques' effect on the individual (Hyland, 2017). These entail meditation, movement meditation such as yoga, and breathing exercises (Daudén Roquet & Sas, 2018). Furthermore, even though research that has been done in this field approached the research problem quantitatively, there is still no statistical information on the target group demographics. Additionally, taking the rise of interest in spiritual mobile applications into account, this increase should stimulate more research in this field. Especially when considering that mindfulness has had growing popularity over the last few decades in both academia and popular culture (Hyland, 2017).

The conceptualization of spirituality of spiritual mobile application users does align with Buddhist ideologies and participants touched on Buddhist concepts as part of their practice. Even though spirituality was debated by participants whether it is considered rather religious or not, both conceptualizations were present. Furthermore, it is important that individuals should stay open minded with the origins of their spiritual practices and take further actions in understanding the background of those. This is due to the fact that mindfulness today seems to be separated from its Buddhist origin which when taken into account can create transformative potential for practicing individuals in their spiritual journey (Hyland, 2017). The research findings of this thesis may contribute to further research on New Age spirituality conceptualization and further assist in the academic understanding of spiritual mobile applications and their understanding of spirituality. In sum, this research has shown that spiritual mobile application users have great potential in understanding how users not only make use of the contents of said apps but also further assist in grasping how unique spirituality is for each individual.

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Appendix 1

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 a 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. Yes/no

☐ ☐

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.

Researcher name [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 2

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?

(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 3

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.

Appendix 4

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