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Mindfulness-Based Mobile Meditation Applications and Musical Experience, Meditopia Case

Yaşar Şekerci
Araştırma Görevlisi
Galatasaray Üniversitesi İletişim Fakültesi
ysekerci@gsu.edu.tr
ORCID: 0000-0002-2574-7843

Abstract

Music and meditation offer an immersive experience in human life. The immersive continuity of meditation with music has a long history in meditation practice. Today, in modern urban life, there is an increasing interest in meditation practices that aim to be spiritual, relaxing, focusing, well-being enhancing, or stress reducing. The growing trend toward meditation practices focused on music and sound continues with the heavy use of mindfulness-based mobile meditation apps using technology. At this point, the musical experience created in mobile meditation practices by statically directing the individual to music and sound plays a critical central role. This study aims to highlight the role of soundscape music in Meditopia, a meditation application. In this regard, task-based observation and in-depth interviews were conducted in this study. The interviews were completed with 14 participants-4 male and 10 female- using the Meditopia application for the first time and living in Istanbul were interviewed through a remote video method. The study showed that participants defined music and sound as core elements in their meditation practice.

keywords: *Meditopia, music, meditation, mobile application, mindfulness, sound*

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Résumé

Applications de Méditation Mobiles Basées sur La Pleine Conscience et Expérience Musicale, Cas de Meditopia

La musique et la méditation offrent une expérience immersive de la vie humaine. La continuité immersive de la méditation avec la musique a une longue histoire dans la pratique de la méditation. Aujourd'hui, dans la vie urbaine moderne, il y a un intérêt croissant pour les pratiques de méditation qui visent à être spirituelles, relaxantes, concentrées, améliorant le bien-être ou réduisant le stress. La tendance croissante aux pratiques de méditation axées sur la musique et le son se poursuit avec l'utilisation intensive d'applications de méditation mobiles basées sur la pleine conscience utilisant la technologie. À ce stade, l'expérience musicale créée dans les pratiques de méditation mobile en dirigeant statiquement l'individu vers la musique et le son joue un rôle central critique. Cette étude vise à mettre en évidence le rôle de la musique du paysage sonore dans les pratiques de Meditopia - étant une application de méditation - la source du son et de la musique, la personnalité vocale, les descripteurs du son et du paysage sonore et les pratiques de méditation des adultes en relation avec la qualité du paysage sonore. À cet égard, une observation basée sur les tâches et des entretiens approfondis ont été menés dans le cadre de cette étude. Les entretiens ont été réalisés avec 14 participants - 4 hommes et 10 femmes - qui utilisaient l'application Meditopia pour la première fois et résidant à Istanbul ont été interrogés via une méthode vidéo à distance. L'étude a montré que les participants définissaient la musique et le son comme des éléments essentiels de leur pratique de méditation.

mots-clés: *Meditopia, musique, méditation, application mobile, pleine conscience, son*

Öz

Bilinçli Farkındalık Temelli Mobil Meditasyon Uygulamaları ve Müzikal Deneyim: Meditopia Örneği

Müzik ve meditasyon, insan yaşamında kuşatıcı bir deneyim sunmaktadır. Meditasyonun müzikle olan kuşatıcı devamlılığı, meditasyon pratiğinde uzun bir geçmişe sahiptir. Günümüzde modern kent yaşamında tinsel, rahatlatıcı, odaklanma, iyi olma halini artırıcı veya stresi azaltmayı amaçlayan meditasyon pratiklerine olan ilgi artmaktadır. Müzik ve sese odaklanan meditasyon uygulamalarına yönelik artan bu eğilim, teknolojiyi kullanan farkındalık tabanlı mobil meditasyon uygulamalarının yoğun kullanımı ile devam etmektedir. Bu noktada mobil meditasyon uygulamalarında kişiyi müziğe ve sese yönlendirerek yaratılan müzik deneyimi kritik, merkezi bir rol oynamaktadır. Bu çalışma, meditasyon uygulaması olan Meditopia pratiklerinde "soundscape" müziğin rolünü, ses ve müziğin kaynağı, vokal persona, ses ve ses ortamının tanımlayıcıları ile yetişkin meditasyon uygulamalarının ses ortam kalitesiyle ilişkisini incelemeyi amaçlamaktadır. Bu bağlamda, bu çalışmada görev bazlı gözlem ve derinlemesine görüşmeler yapılmıştır. Meditopia uygulamasını ilk kez kullanan ve İstanbul'da yaşayan 4'ü erkek 10'u kadın 14 katılımcı ile görüşmeler uzaktan video yöntemi ile gerçekleştirilmiştir. Çalışma, katılımcıların meditasyon uygulamalarında müzik ve sesi temel unsurlar olarak tanımladıklarını göstermiştir.

anahtar kelimeler: *Meditopia, müzik, meditasyon, mobil uygulama, bilinçli farkındalık, ses*

"Now I will do nothing but listen,
...
I hear the sound I love, the sound of the human voice,
I hear all sounds running together, combined, fused or following,
Sounds of the city and sounds out of the city, sounds of the day and night"

Song of Myself, 26
Walt Whitman

Introduction

Meditation practices are studied extensively by both people and different disciplines. Meditation practices are carried out by people with different motivations. These motivations can be listed as spiritual, relaxing, focusing, improving well-being, or reducing stress.

Today, tendencies towards different meditation practices have increased rapidly. In modern city life, crowd, noise and stress sources direct people to meditate. At this point, although "meditation" is divided into many categories as a definition and approach, it has become a focal point in the lives of individuals. This increasing interest has moved meditation practices into the digital fields with the help of technology.

Mobile meditation apps offer many opportunities compared to the traditional meditation practices. These applications allow people to meditate in any place they want or listen to atmospheric music to relax. One of the most significant reasons why mobile meditation applications can be used comfortably in every place is the creation of an acoustic environment. Soundscape or atmospheric music, which is a combination of nature, human, and animal sounds in meditation applications allows the user to create a brand-new environment by the help of music. This acoustic environment in Mobile Meditation applications enables users to have an immersive experience with the music and sound they want in any place. In this respect, the acoustic environment created in mobile meditation practices plays a key role in today's mindfulness-based meditation practices.

In this study, the use of mindfulness-based mobile meditation applications by adults as a musical experience is examined. In the study, it is aimed to reveal the role of soundscape in Meditopia application on meditation practices of adults in terms of the source of sound and music, vocal persona, sound, and soundscape descriptors, soundscape quality. At this point, it should be noted that the soundscape approach, music, words, and dialogues used or produced in meditation practices provide a comprehensive experience (Vidyarthi, Riecke et al., 2012, pp. 408-410). Meditopia was determined as the case study because it is the first meditation application that offers content in Turkish. In this context,

task-based observation and in-debt interviews were conducted in the study.

From Where to Where: Literature Review

Back to the Beginning: Music, Meditation and Mindfulness as Buddhist Teaching

The basic forms of meditation began thousands of years ago with Buddhism as a religious teaching, ritual and performance using various methods and techniques. Although the starting point of understanding Buddhism is essentially similar, monks interacted with the cultures of the different regions they traveled and formed different branches in accordance with the cultures of the region such as Theravada, Mahayana, Tibet and Myanmar Buddhism. A flexible and culturally adaptable approach lies in the formation of these diverse paths within Buddhism. Likewise, meditation types differ according to different teachings of Buddhism. In this regard, "Vipassana" meditation is one of the oldest types of meditation commonly practiced in "Theravda" Buddhism. (Cousins, 1996, p. 35).

It is stated that with Vipassana meditation practice, which is one of the oldest types of meditation, 2500 years of Buddhist meditation and mindfulness tradition can still be experienced today. The applicability of this meditation practice is presented as follows:

"This ancient Way of Mindfulness is as practicable today as it was 2,500 years ago. It is as applicable in the lands of the West as in the East; in the midst of life's turmoil as well as in the peace of the monk's cell. Right Mindfulness is, in fact, the indispensable basis of Right Living and Right Thinking—everywhere, at any time, for everyone." (Cousins, 1996, s. 35).

The relationship between the meditation performance that originated in Buddhism and music is as old as the history of meditation. As Greene and Wei noted, the Buddhist musical tradition used in the earliest meditation rituals differs from the contemporary understanding of music and is used only as "liturgical chant." (Greene and Wei, 2004, pp. 1-2) These hymns are seen as a "catalytic agent for purifying the soul" (Wei, 1992, p.88). Similarly, in the seventh of the ten principles of Buddhism (daśa-śīla), it is committed to abstaining from dancing, singing, music, and other entertainment (Nacca-gita-vadita-visuka-dassana veramani sikkhapadam samadiyam) (Oxford Reference, Daśa-śīla, 2020) In the Buddhist musical tradition, hymns were also pronounced to help monks memorize the Pali teachings. (Greene and Wei, 2004, pp. 1-2) On the other hand, it should be expressed that in Buddhist music tradition, natural sounds such as bird, wind, tree (tianyue) are defined as the "sounds of heaven" and these harmonic sounds produced by nature become a means to be presented to the Buddha (Wei, 1992, p. 81).

> "In the Other World-the Buddha Land, music of Heaven can be heard frequently. There are hundreds of beautiful and extraordinary birds such as white cranes, peacocks, parrots, etc. .... They sing day

> after day with elegant harmonic sounds. These sounds smoothly penetrate the five roots, the five agents, the seven characteristics of bodhi (perfect wisdom) . . . When people hear this music, they all concentrate to chant the names of the Buddhas, Dharmas, and Sanghas" (Wei, 1992, p. 82).

The musical forms used according to the Buddhist musical tradition in different countries and regions also vary. In the cultural context, it is possible to illustrate this change in musical forms, the Japanese shakuhachi flute tradition in Japan, the tantric song in Nepal and India, fanbai hymns in China known as Buddhist music, or paritta hymns (Green, 2004b, pp. 44) -48) in Taylan, Myanmar, and Srikalanka (Greene and Wei, 2004, pp. 1-2). Moreover, it should be emphasized that these various musical forms in Buddhism play a sacramental role in the attainment of the sacred. This role in musical forms is also explained as a sacramental function: music is used to direct the mind of the faithful, but it is not believed to have the inherent virtue of transcending the phenomenal world (Mabbett, 1994, p. 17).

Today, in the context of Buddhism, this wealth of musical culture in Asia has spread to many different parts of the world and has begun to be studied through modern musical perspectives. In particular, the distinctive tradition of recording and making music in meditation music makes it possible to analyze the Buddhist musical tradition discographically (Greene, Howard et al., 2004, pp. 133-134). However, the change in cultural and social structures in this long-term direct relationship between music and meditation has altered existing forms of meditation music.

At this point, Buddhist and non-Buddhist musical forms and performances also differ, being used in meditation that is part of a religious ritual and in meditation that is experienced with a secular approach. Hybrid meditation music is also used in musical forms, especially with the spread of socio-cultural changes and meditation in Western culture. The Buddhist musical tradition is adapted to instruments in different cultures. Buddhist musical culture has evolved into a hybrid meditation music within Western culture. This transformation also reveals a Western-style meditation and mindfulness practice (Wei, 1992, p.86).

Western Modern Times: Music, Meditation and Mindfulness as Secular Praxis

The process of capitalism, which began in the 19th century with modernization, transportation and technological developments around the world, affected China and other countries, reshaping the relationships between society, state and culture. This modernization, which accelerated socially in the 20th century, also changed Buddhism and the Buddhist musical tradition. Until the 19th century, "fanbai" monastic hymns were used in rituals, ceremonies and meditations,

and these hymns were not accepted in the category of music (yinyue). Thus, a musical tradition was maintained that was compatible with Buddhist teachings. The influence of the westernization and modernization process, which started especially in China, Taiwan and other countries, changed the monasteries and Buddhist music culture in the 20th century. Now the concept of music was accepted in place of the traditional fanbai hymns and this process led to the emergence of Buddhist music (Fojiao yinyue) as a social project. Thus, since the first half of the 20th century, Buddhist music and meditation have become accessible and consumable cultural goods for a variety of Western cultures without resembling a traditional ritual. Even during this period, many monks were making lyrical Buddhist music in the Western minor style (Chen, 2004, pp. 86-90). During this time, the role of meditation and rites performed as a daily practice in monasteries also changed. This transformation was aimed at focusing on mental awareness and increasing people's mental concentration within meditation practice.

> "Buddhists are instructed to use their own experience in meditation, as well as in all daily actions, and to undergo a radical transformation in how they sense, know, and feel. The transformation can be achieved through mindfulness of their mental processes and through everyday activities. Buddhist liturgies, besides their communal purposes, function to develop people' s mindful concentration" (Chen, p.93).

Critical View: Scientific Transformations in Music, Meditation, Mindfulness

The radical change in the foundations of meditation and Buddhist musical culture combined with globalization increased interest in meditation as a secular practice. This led to the formation of a new Western Buddhism/approach to meditation in Western societies, and meditation practices and group therapies were incorporated into daily life practices (Coleman, 2002, p. 55). At this point, it is necessary to clarify a few critical points in the westernization and secularization process of meditation. Meditation, which became widespread as a secular practice in the USA and Europe especially after the 70's, has become a commodity and turned into an industry. Investments in meditation studies have increased, and meditation has turned into an individual object of consumption with a universal and cross-cultural assumption. However, the commercialization of meditation, its detachment from the foundations of Buddhism, promotes individualism, in the opposite of this doctrine (Hickey, 2010). Meditation, exotic, "spiritual east" experience, which is a Buddha teaching, is constructed as a hybrid product with western values on the axis of globalization and capitalism (Urban, 2013, pp. 35-44). Likewise, the transformation of meditation takes place through the mutual transformation of global and local elements through hundreds of books, programs, education, videos, therapy and monks (Wilson, 2014, pp.6-8). In particular, both meditation practices and monks are welcomed by post-modern secular individuals as popular culture items in the USA. (Forbes, Mahan, 2017, pp.51-60).

On the other hand, the growing interest in meditation practice has been studied by many different disciplines including medicine, psychology, sociology, clinical psychology, communication, and music. Buddhist meditation practices, which are rapidly being adopted into American and Western culture, are also diverse. Many meditations are practiced in the Therav, Zen, and Tibetan traditions. These meditation practices, led by Buddhists, have been similarly culturally and socially transformed (Lindahl, Fisher et al., 2017, p. 1). This transformation has resulted in the emergence of a "McMindfulness" phenomenon that has been abstracted from the Buddhist ethical and moral values of meditation in the academic and public sphere, commodified and commercialized (Hyland, 2017, pp.335-338) Kabat Zinn, one of the founders of Mindfulness Based Stress Reduction practices, criticizes the situation as follows: "mindfulness has become a business that can only disappoint the vulnerable consumers who look to it as a panacea." (Kabat-Zinn, 2015).

Again, the definition and meaning of the concepts and practices of meditation and mindfulness that modern Western societies and the scientific world have pointed to are largely broken off from their traditional religious and spiritual roots. In this regard, mindfulness consists of two basic components, and these components are realized with meditation practices as a secular practice.

> "…first component is the regulation of attention in order to maintain it on the immediate experience, and the second component involves approaching one's experiences with an orientation of curiosity, openness, and acceptance, regardless of their valence and desirability" (Hölzel, Lazar, et. al, 2011, p.538).

Meditation, now a billion-dollar sector, examines its effects on cognitive processes within various literature and analytical frameworks. Stone explained mindfulness meditation's global level of sectoralization as follows: "Mindfulness meditation has exploded into an industry that ranges from the monastery to the military. Google, General Mills, Procter & Gamble, Monsanto and the U.S. Army are just a handful of the many enormous institutions that bring meditative practice to their workforce." (Stone, 2014).

In scientific practice, meditation is now used as Mindfulness Based Interventions (MBI) or Mindfulness Based Stress Reduction Interventions (MBSR) (Khoury, Sharma, et al., 2015, pp. 519-520) as an alternative treatment/support/healing approach within the discipline of medicine and psychology (Eberth and Sedlmeier, 2012, pp. 174-175). In these studies, on meditation, on the one hand, meditation and mindfulness are fed from Buddhist literature (Kuan, 2012; Compson, 2014). On the other hand, medicine, psychology, clinical psychology, cognitive psychology, neurology, cognitive informatics, and human-computer interaction are analyzed in terms of theoretical and methodological frameworks of analysis formed in broad and comprehensive disciplines. It should be underlined

that at the scientific level, meditation has a serious cultural and epistemological cost in transforming it into a predictable, measurable (Hyland, 2017), operational and standard concept. The cost of this transformation process can be summed up in the words of Williams, and Kabat-Zinn as follows: "the essential meaning of mindfulness may have been exploited, or distorted, or abstracted from its essential ecological niche in ways that may threaten its deep meaning, its integrity, and its potential value" (Williams, Kabat-Zinn, 2011, p.12).

In other respects, todays these studies consist of studies that examine the positive and negative side effects of meditation and meditation as a spiritual experience (Lindahl, Fisher et al., pp. 3-5). At this point, there is evidence that mindfulness-based meditation research supports the healing of many diseases in psychology and medicine. There have been studies on the effects of meditation on a variety of issues including mental disorders, chronic illness, addiction, depression, stress, anxiety, and eating disorders. (Grossman, Niemann, et.al, 2004, pp.38-40; Hölzel, Lazar, et. al, 2011, pp.537-538).

Another important point that has emerged in mindfulness-based meditation research is that these practices are closely related to cognitive processes such as mind execution, attention, emotion, and motivation. Findings of increasing attention and cognitive flexibility are drawing attention, particularly in mindfulness meditation (Moore and Malinowski, 2009, p.177). Increased control of cognitive processes and positive improvements in participants mood have been found in the development of sustained attention following long-term mindfulness meditation (Zeidan, Johnson, et.al, 2010, pp. 601-604).

On the other hand, the cognitive approach comes to the fore in these academic studies that focus on the effects, benefits, and points of meditation and mindfulness. Especially in the last 15 years, the transfer of meditation practices to digital platforms and mobile applications has brought the relationship of meditation practices with cognitive processes to another dimension.

Now, Take a Deep Breath: Mobil Mindfulness Based Meditation Apps

With the rapid development of communication, informatics and internet technology since the early 2000s, traditional practices have been quickly transferred or transformed into digital ones. In particular, in the last 15 years with the proliferation of Internet and information technologies, traditional meditation and relaxation sessions, which are becoming more popular every day, have been transferred to mobile meditation applications. With mobile meditation apps, meditation has now become a fast, more accessible, individualized way to practice, independent of space and time (Derthick, 2014, pp. 2275-2276).

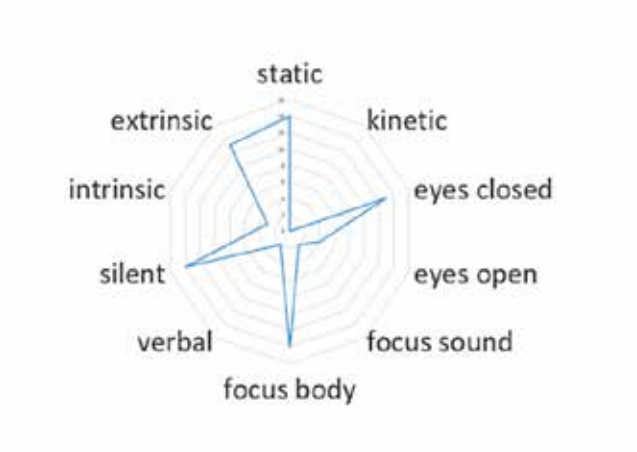
Mobile meditation apps basically offer a similar structure of meditation practice. While in traditional meditation there is a person and a meditator, a mobile app

takes on the role of a meditator in mobile meditation apps. In terms of the roots of mobile meditation practices, "monks and disciples" in the Buddhist tradition have evolved into a secular meditation practice in Western culture, and have now become an individual mental, emotional, and internal self-regulation tool.

The effects and benefits of today's mobile meditation applications, as well as the classical meditation practices widely used in Western culture, have been studied by various disciplines such as medicine, psychology, clinical psychology, cognitive psychology, neurology, cognitive neurology, computer science, human-computer interaction with scientific perspectives. According to these studies, mobile meditation practices improve mental health as in traditional meditation practice (Flett, Hayne et al., 2019), relaxation, stress reduction (Gál, tefan, and Cristea, 2020), and improvement of well-being (Bostock, Crosswell et al., 2019), sleep quality (Rusch, Rosario et al., 2019), depression (Rung, Oral et al., 2020), eating disorders (Omiwole, Richardson et al., 2019). There is evidence that it plays a supportive/healing role in such matters.

According to a comprehensive study by Roquet and Sas (2018), when evaluating mindfulness-based meditation practices in terms of design, type, approach, and technique, it was found that most of these practices are static, external, body-oriented, closed-eye, and nonverbal in nature (Roquet und Sas, 2018, S. 3).

Figure 1. Mobil Mindfulness Based Meditations Techniques
(Roquet and Sas, 2018, p.3)



When mobile meditation applications are evaluated in terms of soundscape, it is noted that the application includes nature sounds, bells, ambient sounds, and quieting options. Soundscape is briefly defined as an acoustic composition resulting from the voluntary or involuntary overlapping of different sounds of physical or biological origin (Farina, 2013, p. 3). The role of sound

system, music, and verbal expression, which are a crucial component in mobile meditation applications in daily use, referred to as "meditation music," should also be fully explored in academic research.

Creating an Acoustic Environment in Meditation Apps: Meditation Soundscapes, Meditation Music or Anyway?

Each person interacts differently with music. In the musical experience, the interpretation of sound within a particular system is the determinant of the person's own environment and mood. In this respect, the musical experience is subtle and indescribable. Why some people find a piece of music too affecting or another person cannot be affected is difficult to answer. In concrete terms, from a musical point of view, the answer to these questions arises from the individual's perception of music and cognitive processes.

In this approach, defined as embodied music cognition, the evaluation of structural components such as harmony, melody, rhythm, and timbre by individuals with different expectations generates their perception of music. This perception is the interpretation of musical components processed through the senses, rather than an emotional expression as cognitively strong, weak, and quiet, by comparing them to prior knowledge. All this is a result of the structural and technical components of music, the relationship between body and mind (Leman and Maes, 2014, pp. 81-82).

In the meditation practice conducted through mobile meditation applications, the musical recognition process is also effective in the interaction between the individual's mind and body with verbal expression, sound and music being its basic components. In this regard, certain selected sound stimuli are generated in mobile applications to support the individual's meditation for relaxation and stress reduction. Testing the efficacy of sound stimuli is crucial for sound production (Hernandez, Dvorak et al., 2020a, p. 13). For this reason, the selection of sound stimuli (harmony, melody, beat) that are effective for the listener in practice determines the musical activity in meditation practice (Hernandez, Dvorak et al., 2020b, pp. 14-15). This condition is also used in practice to create an acoustic environment for meditators. Thus, meditative soundscape systems are created according to the different meditation contents in use.

There is the soundscape of nature, life, cities, nights, time, and communities on Earth. Soundscape consists of several basic components. Main sounds (Keynote Sound) are sound signals and speech marks. (Soundmark) The main sounds of a landscape are the sounds of water, wind, forests, plains, birds, insects, and animals, which vary depending on the geographic climate of the region. These main voices also play a role in drawing the outline and character of a space (Schafer, 1993, pp. 9-10). Many of the keynote sounds are also produced from regionally changing materials such as stone, iron, bamboo (Schafer, 1993,

p. 59), and determining the keynote sounds can also influence human behavior (Schafer, 1993, p. 48). Keynote sound, sound signals, and sound markers are unique components that create the sound atmosphere of a city, time, experience, or community. From this perspective, the natural soundscape can be the main sounds of birds, wind and forest, the sound marker in the sound atmosphere of a city can be a bell and the sound marker of a night can be the sounds of the watchman.

Similarly, within traditional Buddhist musical culture, there are various meditation sound atmospheres consisting of many main sounds and sound markers. In particular, the sounds of birds, wind, and nature, which are considered to be the sounds of heaven, are accepted as the main sounds in attaining the Buddha (Wei, 1992, p. 81). As mentioned earlier, "shakuhachi flute" made of wood, sounds of wooden fish instruments and bells played in monasteries are important sound markers in meditation sound atmospheres. These meditation sound atmospheres, which change periodically, have changed with the effect of modernization and westernization, and hybrid or new atmospheres have emerged. In audio applications, the meditation atmosphere is occurring hybrid from the production of these following instruments: water, wave, fire, wind, forest and nature sounds, Japanese Shakuhachi Flute, Erhu, Guzheng, a Chinese bamboo flute, Guqin, erhu, piano. This musical approach, consisting of various instruments and natural sounds, can be defined as meditation music or soundscape music. In this context, it should be noted that the analysis of the components that make up the soundscape is important to study the role of the individual in relation to his behavior and musical perception in the meditation practice.

Research: Mindfulness-Based Mobile Meditation Applications as A Musical Experience, Meditopia

Meditopia, a mindfulness-based mobile meditation application, is an application that provides its users with content to reduce their stress, strengthen their focus, improve their sleep quality or feelings such as anxiety, unhappiness and self-confidence. The Meditopia application expresses its mission to help people around the world discover the happiness within them and develop the mental stamina they will carry into their daily lives with its content of awareness, meditation, and music (Meditopia, 2020). Meditopia, which also offers Turkish content to its users, was downloaded 1.4 million times during the COVID-19 period (Webrazzi, 2020).

Most of the meditation practices support users as static, external, body-oriented, closed-eye, and nonverbal. In addition, very few of the applications have music guidance. (Roquet and Sas, 2018, p.3). Meditopia, on the other hand, is a sound-oriented meditation practice. Based on Roquet and Sas's (2018) approach to classifying meditation practices, Meditopia consists of the following meditation components and techniques.

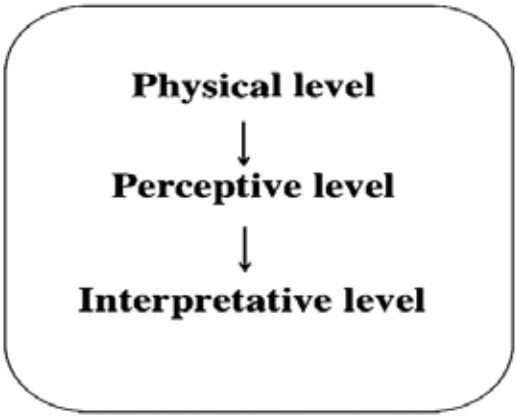
Table 1. Meditopia Meditation Components and Techniques

Meditation Type	Cognitive Strategies	Object of Attention	Closed/ Open Eyes	Static/ Kinetic	Verbal/ Non-Verbal	Soundscape
Guided Meditation	Concentration Introspection	Body	Both of Them	Static	Verbal	Nature and Hybrid Sounds

Methodology

The genetic, cultural, and social codes of the perceiving individual are effective in the perception of a natural or artificial sonic environment. As Farina (2013) stated, a sonic environment can be defined in three different levels. These are the physical level, the perceptual level, and the interpretive level (Farina, p. 108).

Figure 2. Three Levels of Human-Soundscape Interaction Representation (Farina, 2013, p.109)



The physical level is the perception of the physical sound by external stimuli, and the perceptual level is the perception of the physical sound according to the person's mental state. On the other hand, the study of the sound environment at the interpretation level includes both the acoustic character of the sound environment and the evaluation of the individual experiencing the sound environment according to personal, cultural, and social variables (Farina, 2013,

p. 108). This study aims to demonstrate the role of sound atmosphere in the application of Meditopia to adult meditation practices in terms of sound source and music, person of sound, descriptors of sound and soundscape, soundscape quality. In this regard, the study used in-depth interviews and task-based observation methods to examine the sonic environment and soundscape presented in the Meditopia application with respect to meditating listeners.

The study seeks answers to the following questions in order to investigate the relationship between meditation practice and language, sound, and music presented in the practice:

RQ1: What is the role of music and sound in meditation practice in Meditopia?

RQ2: What is the relationship between relaxation and stress reduction meditation practices and the preferred source of music, soundscape quality?

RQ3: Is Vocal Attractiveness a determinant variable in meditation use?

RQ4: What is the relationship between noise sensitivity, noise annoyance and stress reduction and relaxation in in meditation practice?

Analysis Framework

In studying the different soundscape forms presented by the Meditopia application, an analysis framework was created with a multifaceted approach, combining relevant and complementary approaches. In this regard, the study of soundscape forms was based on Farina's (2013) approach to psychological interpretation of soundscape, Aletta, Kang and others ' (2016) framework of Soundscape descriptors, Zuckerman and Driver's (1989) study of the vocal attractiveness stereotype. Soundscape descriptors are based on the identification of the indicators that make up the sound scheme in the environment. There are different compositions defining the sound scheme in Soundscape music. In the context of these descriptors, sound scape quality is an indicator of how the environmental music environment is perceived (Aletta, Kang, et. al, 2016, pp.66-68). In addition, in interpersonal interaction, the tone of the voice, the speed of speech, and the style are fundamental the stereotype sources. Individuals' perceptual vocal attractiveness stereotypes determine which sound is beautiful or good in relation to the attractiveness of the sound (Zuckerman, Driver, 1989, pp.67-70). According to the analytical framework designed in the study, the attitudes and behaviors of the participants are examined based on the questions identified using the following concept sets.

Table 2. Constructs Used to Measure Participants' Attitudes

Construct	Data Collection Questions	Theoretical Source
Source of Sound Geophony Biophony Anthrophonies	Which music do you prefer in the app?	Farina (2013), Davies, et.al, (2013), Schafer (1993)
Noise/Sound Sensitivity	Did the speech, sound and music bother you?	Farina (2013)
Noise/Sound Annoyance	Do you prefer speech and music during meditation?	Farina (2013); Aletta, Kang, et. al (2016); Steele, Chon, (2007).
Soundscape Quality	How did you find the speaking voice and musical tone? Can you express this tone of voice and music with an emotion?	Farina (2013); Aletta, Kang, et. al (2016); Yu and Kang (2008)
Vocal Attractiveness/ Persona	Would you have a preference for the voice of meditation to be voiced by a woman or a man?	Zuckerman, et. Al (1989)
Pleasantness/ Unpleasantness	Did the music you chose match the expectation in your mind? How did you find the music?	Aletta, Kang, et. al (2016); Davies, et.al, (2013

Sample and Procedure

In the study, 14 participants who using the Meditopia application for the first time and living Istanbul were interviewed using a remote video method. The interviews were held between December 26, 2020, and January 26, 2021. Participants in the study were invited to the research with Facebook and Instagram announcements and stories. The sampling criteria were determined that the participants had not used any meditation practice before. In addition, the participants' interest in meditation experiences was also measured in the pre-interview. People who had previously participated in meditation experiences were not included in the study. The sample is aimed to be in a female and male equal distribution. However, in the process of finding the participants, most of the

males did not want to participate in the study. The study was conducted with 4 male and 10 female participants.

The interview lasted an average of 30 minutes. In the study, participants were first introduced to the Meditopia application, participants were asked to perform a stress-related meditation in Meditopia, and then they were asked to perform a meditation that they specified. Before the participant began the meditation practice, the remote interview was completed and the video call was restarted after the meditation. An in-depth interview was then conducted with the participants. During the in-depth interview, participants had listened to the music they selected/preferred at Meditopia for 3 minutes. The participant was observed listening to the music, and then the interview process was completed with semi-structured questions.

Table 3. Research Procedure

Phase 1	Pre-interview
Phase 2	Meditation and Music Experience
Phase 3	In-Depth Interview

Research Findings

The findings obtained in the in-depth interview with the participants were examined in terms of source of sound and music, persona of sound, sound and soundscape descriptors and soundscape quality, which are the main components in the evaluation of sound atmosphere.

Source of Sound

In sound environments, there are 3 different sound sources. These are geophonic, biophonic and anthrophonic sounds (Farina, 2013, p. 7). In the mobile application Meditopia, natural sounds such as water, fire, wave, forest, night and music such as Mars, Venus, Sakura and tree shadows are represented. In the study of these sounds and music, it was found that geophonic, biophonic and anthrophonic sounds were used together in the practice. The following question was asked to the meditators during the study ''Which music do you prefer in the app?''

Most participants indicated that they preferred nature sounds during meditation and would listen to nature sounds to relax and calm down. This situation is also due to the participants stay at home for a long time during COVID-19. In addition, participants requested interactive visual support while listening to the sounds of nature:

> "In practice, we need animated graphics that focus on the sound and complement the sound in the same way. I expected an interactive

> image to come out of the mountain like water drops moving in the rush of water or listening to the sounds of the mountain. Since we were longing for nature at that time, we were closed, so I prefer nature sounds, but for those sounds, visual elements should also be supported.'' (M., Female, 27).

Participants also experienced the abstract theme music presented in Meditopia and found it distracting when listening to music such as "Venus, Vam, Quartz" with binaural effects in a straight flow:

> "I prefer the sounds of nature. Nature sounds soothing. The music in the app is exhausting. The music is so intense that it feels harsh and tires my mind. The truth is that the music did not bring peace, I frowned during meditation.'' (Ay., Female, 25).

In Meditopia mobile application, sounds and music can be selected and listened to individually or as background noise by users. On the other hand, a similar response was not shown in practice. Participants listened to voices and music as background sounds. In this regard, music was found to have a complementary effect to the meditation speeches and participants did background listening:

> "99% of this application is background noise. The application does not work if there is no background sound. The sound of the waves during meditation keeps my mind away from my problems." (E., Male, 29).
>
> "Sound and music complement each other; it gets boring after a while if there is no music in the background.'' (An., Male, 29).

People may react differently to sounds depending on personal experience, culture, or different contexts in which the action takes place (Weinstein, 1978). Sound and noise sensitivity is usually an individual criterion. In the Meditopia application, different sounds and music are offered regardless of the selected meditation content. During this meditation, which is performed for relaxation, stress, and focus, sensitivity to the sound of nature and music in the background is also an important variable in terms of the relationship between meditation and music.

Participants were asked the following questions during the study "Did the speech, sound and music bother you?" and "Do you prefer speech and music during meditation?" With the exception of one participant (Ay., Female, 25), the others indicated that they were not bothered by the sound of speech and background music during meditation. In addition, participants indicated that they focused on the background or speech sound. This demonstrated that for relaxation, stress, and focus related to the speech sound and music presented, there was no sound sensitivity or noise interference:

> ''My eyes were closed during the meditation; I had lain down. The meditation app contains good content for mindfulness. In meditation

it is the background sound that keeps me on topic and calm.'' (Ed., Male, 29).

Soundscape Quality

In studies of soundscape quality, there are studies that attempt to determine soundscape forms by good or bad or physical and perceptual descriptors (Aletta, Kang, et al., 2016). In meditation practice, it would be appropriate to assess the quality of the soundscape in terms of whether it is a soundscape that is compatible with the purpose of meditation, stress, relaxation, and concentration and supports these practices of the participants. In this context, participants were asked the following questions to perceptually interpret and evaluate the various sounds and music presented in Meditopia in relation to the participants. "How did you find the speaking voice and musical tone?" and "Can you express this tone of voice and music with an emotion?" Participants focused more on the sound of the voice guidance during meditation than on the music in Meditopia. In principle, it is possible to separate the findings on the sound of speech in the application as positive and negative. Some of the participants found the speech voice "unfriendly, artificial, robotic" (Ed., Male, 29), "forced to look sincere, seem calm" (Eb., Female, 29), "acted" (As., Female, 31), "Sound, not convincing. unreal intonation, irritating, unnatural" (Şe., Female, 29).

On the other hand, most of the participants expressed the speech tone with positive feelings, besides naturalness, '' calm, soft, loving, relaxing, warm, peaceful, as if a mother was telling a fairy tale to her child'':

> "Female voice, you are lying in bed at night, your mother is sitting at your bedside, come my child.... Your mother is stroking your hair. Compassion is described as a three-way voice consisting of compassion, wisdom, and experience." (Ed., Male, 29).

Regarding the background music played during meditation in the practice, most participants preferred nature sounds and indicated that they liked the sounds: "I prefer nature sounds. I feel like I am there when I close my eyes. When there is fire and wood burning. When I turned on the fire sound, I thought I was camping. I imagine myself in an environment with sounds." (D., Female, 31).

Some of the participants stated that the background music working in a similar tone distracted the attention after a certain period of time.

> "At first, music allows me to get into the sense of meditation. I listened to it while trying to clear my mind. But after a while, the scratching, jingling noises in the back distracted me" (Şe, Female, 29).

Vocal Attractiveness/Persona

The attraction of sound that guides users in meditation practices can also be crucial in meditation practice. In the Meditopia application, the voice that guides meditation is generally female and, in some content, a male voice. It is also closely related to the tone that determines the soundscape quality in the participants' evaluation of sound attractiveness. The following questions were asked participants to learn their preferences for the voice person in their meditation practice, "Would you have a preference for the voice of meditation to be a woman or man?"

The study did not find a common trend regarding the participants' personnel voice preferences. Some of the participants indicated that they would prefer a female voice, while some of the female participants would prefer a male voice. From this point of view, it was found that participants would prefer to choose different vocal personalities presented by Meditopia. Furthermore, it is noted that the use of predominantly female voices in Meditopia content can be a problematic approach in terms of gender:

> "Why is there always a female voice in the practice? It was as if the woman had the task of relaxing and calming down. This is a problematic approach, I think. There should also be a male voice option'' (Me., Female, 27).

Pleasantness/ Unpleasantness

The pleasure and satisfaction of a healthy environment derive essentially from two variables. These relate to the negative perception (cacophony) / positive perception (hubbub) of the soundscape in the listening experience and whether the sounds are static or rhythmically variable (Farina, 2013, p.116). For this reason, meditation practices depend on providing a soundscape that is compatible with the context so that sound enjoys and satisfies satisfaction. To determine whether participants liked listening to music presented in the background or alone during meditation and to determine their satisfaction status, nature sounds, tree shadows, and sakura music were first turned on according to participants' preferences and listened to together. Then, participants were asked the following questions, "Did the music you chose match the expectation in your mind?" and "How did you find the music in meditation app?"

Most participants indicated that the expected image and perception in their minds were compatible with the sounds of nature, as they were able to identify the sources of nature sounds, and indicated that they were satisfied with them. However, meditation music with abstract titles such as "Tree Shadow, Sakura, East Wind" was found to have a discrepancy between the expected sound in participants' minds and the meditation music. In this case, participants tended to change the music:

"The graphics used for the music are very important. I prefer it after the picture. I prefer the rhythm of life. It was a disappointment. I was waiting for a waterfall sound, but it wasn't. I decided to use the tree shade, a tad more active, it should be with rustling leaves and with the sound of nature.'' (Me., Female, 27).

"In meditation, I closed my eyes while listening to namely shadow of tree music. Indeed, I imagined myself lying in a cool shade of a tree on a summer evening. The memories of my past came to life in my mind. Especially the wind and leaf sounds affected me." (Aş, Female, 27).

Discussion and Conclusion

In recent years, as various meditation and breath therapy practices have increased, mindfulness-based meditation practices have become an accessible popular alternative "supportive, therapeutic" option for stress, mindfulness, and concentration in daily life practices. Meditation has come a long way from its religious and ritual roots and is gaining popularity as an exotic option in Western culture. Meditation has spread rapidly as a popular culture tool in "consumer society" with the effect of globalization and capitalism. Meditation practices that have become commodified and commercialized, far from the ethical and moral concerns at their roots, have now turned into a "McMindfulness" phenomenon. The McMindfulness vortex has turned mindfulness meditation practices into a commercial object of consumption/research at academic, institutional, and societal levels. Therefore, the issue of meditation needs to be studied without objectification.

In parallel with ethical and epistemological concerns, the meditation industry continues to grow in the digital space for the last 5 years. Nowadays meditation practices based on mobile applications have spread rapidly. In an environment where classical meditation and technology-based meditation practices are so widely used, positive effects and supportive findings have been noted by various disciplines such as medicine, psychology, clinical psychology, neuropsychology, computer science, and human-computer interaction in the treatment of many psychological diseases and medical disorders. However, there is no comprehensive study on the relationship of sound and music to meditation practices, which are a fundamental component in mobile application-based meditation practices and are instrumental in designing sound environments in meditation practices.

The aim of this study is to explain the role of the sound atmosphere in Meditopia practice on adult meditation practices in terms of the source of sound and music, the person of sound, the descriptors of sound and soundscape, and the quality of soundscape. At this point, task-oriented observation and in-depth interviews with participants were conducted to explore the relationship between

mobile app-based meditation practices and the sounds and music that make up the meditation scene in practice.

According to the results in the study, it is necessary to make clear that speaking voice and music in mobile app-based meditation practices are a crucial variable in terms of musical experience. In the study, results were obtained that speaking sound and background sound in meditation practice are an essential element affecting the experience for the participants. In meditation practices, participants often perform background listening and music and focus on the guiding speech sound during practice. Participants prefer nature sounds as background sounds during meditation. At this point, participants can prefer to increase options for music other than the sounds of nature that drive the soundscape of meditation in the Meditopia application. This improves the quality of the music experience in meditation practice. Again, the tone of the leading speaking voice during meditation was carefully evaluated by the participants. At this point, it was said that the tone of the speaking voice should be natural as well as female and male options.

This study qualitatively examined the relationship between soundscape music and meditation practices in mindfulness-based meditation apps in terms of observation and attitudinal findings. To comprehensively examine the role of the sound environment in meditation practices, there is a need for an interdisciplinary study of the physical, perceptual and interpretive levels of soundscape music, including the disciplines of psychology, music, human-computer interaction in further research.

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