Original Research

A Mixed Methods Approach to Understanding Conceptions of Mindfulness Meditation

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Abstract

Background: Mindfulness meditation (MM) is an increasing area of interest for health professionals and the general public alike. Beneficial outcomes are associated with this practice; however, definitions of mindfulness and meditation are varied, and anecdotal accounts suggest that people hold conceptions about the constructs. Furthermore, mindfulness has been incorporated into therapeutic modalities without much consideration for context, including the client's previous experiences with and understanding of MM. To date, only one research article [1] has been published on the layman conceptions of MM. Research has yet to establish if conceptions exist; and, if they do, how prevalent these conceptions are in varied samples. To examine the discrepancies between popular views of MM and research, 479 college students were surveyed.

Methods: Attitudes and beliefs toward MM were assessed via a series of open-ended questions and vignettes, with self-report questionnaires assessing religion and spirituality, trait mindfulness, barriers to practicing meditation, avoidance and acceptance, values, and demographic variables. A mixed-methods (deductive qualitative analytic and quantitative) approach based on several common conceptions from practitioners and personal experiences with conceptions (e.g., emphases on religious and cultural factors; using
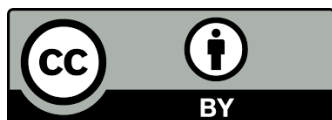
meditation as a means of control) was used to study the social phenomenon of participants' conceptions of MM.

Results: Several key themes emerged from the data. As examples, approximately 96% of the sample said MM was about relaxation and over half described it as a strictly religious practice.

Conclusions: Several conceptions about mindfulness exist and this may have implications for mindfulness-based treatments. Study limitations and future directions are discussed.

Keywords

Meditation; mindfulness; conceptions; mixed methods

1. Introduction

1.1 Mindfulness and Mindfulness Meditation

The word "mindfulness" with regard to Buddhism comes from the Pali word "to remember" (*sati*). This word is related to consciousness, attention, being fully present, and maintaining a presence of mind [2, 3], and it has countless overlaps with Western conceptualizations of this word (e.g., attention, focus). Mindfulness can be conceptualized as self-management [4], a coping skill where awareness of conditions allows for better responding. Further, mindfulness practice can function to increase acceptance. Acceptance is an integral component of meditation – particularly emphasis on non-striving, nonjudgment, openness to experience, and curiosity to new thoughts and feelings. Although there are many different conceptualizations of mindfulness and related concepts, it is thought to be a distinct, innate human experience that all are capable of practicing [5].

Two popular, and seemingly ubiquitous, Western understandings of the term mindfulness are the definitions offered by Bishop et al. [6] and Kabat- Zinn [7]. Bishop et al. [6] define mindfulness as the self-regulation of attention to immediate experiences while adopting an attitude of curiosity, openness, and acceptance. These authors [6] set an objective of operationally defining mindfulness, so that it may be studied and tested. Kabat-Zinn [7] has defined mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience, moment to moment."

Shapiro, Carlson, Astin, and Freedman [8] elaborate on the definition of mindfulness offered by Kabat- Zinn [7] – they outline an axiom labeled *intention*. Intention is the purpose of practice, and it can lead to a substantial change in perspective. Shapiro et al. [8] argue that, with the Westernization of mindfulness, some of the fundamental components of intention have been lost. They state this feature of mindfulness is often overlooked in some newer understandings of mindfulness [8].

Mindfulness is an experiential quality, which can be utilized in many ways and in multiple settings. For example, meditation can be used to gain skills in mindfulness. These practices are commonly used in a secular fashion, often with some integrated Buddhist philosophy. Mindfulness can also be more active. It can be brought to all daily activities that are relevant to a person (e.g.,

breathing, eating, walking). It can also be practiced in more formal settings such as tai chi, yoga, and Pilates, and it is being incorporated more and more in psychotherapy settings.

Psychological treatments that incorporate mindfulness include Mindfulness Based Cognitive Therapy (MBCT; [9]), Dialectical Behavior Therapy (DBT; [10]), Acceptance and Commitment Therapy (ACT; [11]), and Mindfulness Based Stress Reduction (MBSR; [12]). Mindfulness in a therapeutic context can be understood in several ways. Kabat-Zinn suggests that Mindfulness-Based Stress Reduction (MBSR; [12]) can serve as an exposure technique. Exposure to ongoing experiences, with the absence of judgment and "catastrophic consequences," allows for desensitization of physical and psychological pain by reducing the emotional response to that pain (decreasing emotional reactivity). Clinically, mindfulness can also be viewed as a type of "mental training," which includes increasing awareness and responding skillfully to reduce cognitive vulnerability [6]. Many forms of mindfulness (including meditation) involve gaining an understanding of one's thoughts, as well as viewing and experiencing thoughts and feelings with a transient nature and subjectivity [6, 13].

1.2 Relaxation and Mindfulness

In the West, MM is commonly conceptualized as a relaxation technique. This relationship between mindfulness and relaxation proves to be complex [4]. Mindfulness is a non-goal-oriented processes; therefore, relaxation may or may not be a side effect of practicing mindfulness, including meditation. In fact, some "side effects" of mindfulness seem paradoxical to relaxation (e.g., racing thoughts and autonomic arousal). Baer [4] suggests even though mindfulness practices may lead to relaxation, this result is not the main reason for practicing these skills, particularly in the context of therapy.

Although mindfulness and meditation can induce feelings of relaxation, these outcomes - if achieved - tend to be secondary, and for the sake of clinical work are not necessarily desired. Relaxation can actually interfere with exposure [14]. Clinicians may use mindfulness techniques to help clients be in the present moment rather than following rules that are dictated by some imagined consequence. This process allows for two other important processes. First, exposure to thoughts, emotions, and sensations allows for habituation of autonomic arousal and elicitation. Second, opportunities for a broader range of behavioral responses are evoked as a result [15]. Without an initial heightening of arousal and elicitation to become desensitized, this process cannot effectively occur [4].

Although not true of empirical therapeutic models that incorporate mindfulness, some current mindfulness practices emphasize the hypoarousing and relaxing effects of meditation with little focus on the stimulation and alertness [16]. In contrast original Buddhist practices of meditation describe "a state of relaxed alertness", being a middle ground between extreme hypoarousal and hyperarousal. Britton et al. [16] describe a nonlinear trajectory of meditation practices, where earlier devoted practice brings about a propensity for sleep and fatigue, and later stages produce more wakefulness. These changes over time are dependent on dose (the amount of time spent meditating), meditative expertise, and one's contemplative trajectory [16].

1.3 Trajectories and Musings

With a variety of different interpretations of mindfulness processes, conceptions and misunderstandings can occur. In other words, when people first start meditating, it may just make them relaxed; whereas, later, meditation may heighten their arousal. Similarly, inexperienced meditators often note distress whereas more experienced meditators report less discomfort during meditation exercises [16].

An individual may interpret one MM experience as "the way meditation is" across time and situation. Mindfulness can be practiced in several ways, and can take on the functions of the related activity. Although this is a typically efficient way to learn, when an individual relates mindfulness to a single activity, such as meditation or psychotherapy, or when they think it will always lead to relaxation (or distress), rigid ideas may develop. It can be problematic when individuals categorize their practice by themes (e.g., mindfulness for relaxation, spirituality, or avoidance). As scientific inquiries develop, and as growing interest in creating new mindfulness and meditation-based interventions increases, researchers and clinicians need to consider the effects these multiple interpretations can have [17, 18].

Understanding these interpretations are fundamental to influencing the acquisition of mindfulness. An individual's acquisition of mindfulness and MM outside of a formal setting might be quite different than in a formal one. Learning about MM from a diverse set of sources (e.g., media and popular culture, word of mouth) may lead to different, and possibly inconsistent, interpretations of mindfulness and meditation. As stated previously, there are substantial misunderstandings of meditative disciplines within Western psychology [19], and in a therapeutic context, these conceptions might limit effectiveness.

Although much research exists on the psychological and physiological effects of mindfulness, limited research has been done on the popular conceptions of mindfulness, or how these factors affect the teaching and acquisition of MM. In fact, only two studies to the authors' knowledge have explicitly explored both conceptions and potential barriers to utilizing meditative practices ([1, 20], respectively).

Hitchcock et al. [1] explored common conceptions of mindfulness in a college sample (*N* = 361). They determined through a series of open-ended responses that students paralleled the concept of mindfulness to awareness – awareness of internal sensations, external objects, and present moment awareness. Of these three, approximately twice as many individuals linked mindfulness with external, rather than internal stimuli. Also, using a factor analytic approach, they identified three latent factors of mindfulness conceptions: *relax, stop thought, avoid*; *notice, be present*; and *control difficult emotions*. Participants also considered mindfulness as unrelated to psychological acceptance. The factor for controlling difficult emotions and the unrelatedness of psychological acceptance are especially striking, given that many mindfulness-based psychotherapy approaches attempt to undermine control agendas that patients have and increase their psychological acceptance. The authors suggest that clinicians who take a mindfulness-based approach may want to consider the "diverse views" that individuals (in this case, students) have [1].

Relatedly, Williams et al. [20] developed and validated a measure in attempts to explore reasons for attrition in meditation-based studies. Specifically, they explored barriers to participating in meditative practices. This resulted in The Determinants of Meditation Practice Inventory (DMPI). Through expert interviews and a comprehensive literature review, the authors

identified three domains for their measure: *Perceptions and Conceptions, Pragmatic Concerns*, and *Sociocultural Beliefs.* The measure displays strong psychometric properties, and adequately assesses an individual's attitudes and beliefs towards meditation and engagement in related behavior [20]. Although little research has used the DMPI, the measure has potential for being an indicator of an individual's beliefs, perceived barriers and conceptions, and their willingness to engage in future meditation.

1.4 Present Study

The popularity of mindfulness in contemporary psychological research is unmistakable. Alternate conceptions and differences in information sources may result in challenges to mindfulness practices and research exploring its effects. Building on the works of Hitchcock et al. [1] and Williams et al. [20], this study was designed to examine the extent to which conceptions are prevalent using a diverse college sample. The purpose was not to challenge current methods of teaching and utilizing mindfulness, but rather to study how MM is conceptualized by individuals to increase practicality and usability. *Conceptions* for this study refer to content reported by the participants that seemed "unworkable" for the person in the context of clinical work or clinical research. It should be noted that participants may have answered questions considering a different context, as well as dependent on their experience with MM (e.g., meditation retreats, classes, seminars, counseling). It was hypothesized that undergraduate students would present with conceptions; however, no a priori hypothesis specific conceptions, or their relationships to demographic variables.

2. Method

This study was approved by the University's Institutional Research Board, which is in compliance with The Belmont Report and the Declaration of Helsinki.

2.1 Participants

Adult undergraduates (N = 479; M age = 21) at a public university in the South-Central United States were recruited online to complete measures and were compensated with extra credit in a psychology course for completing the survey. Participants in this study were predominantly White (47.6%), Christian (59.3%), single (88.8%), female (69.3%) undergraduate students. After consent, all participants were given the online survey, including the qualitative, quantitative, and demographic measures.

2.2 Measurement

Kentucky Inventory of Mindfulness Skills (KIMS). The KIMS [21] is a 39-item self-report questionnaire assessing facets of trait mindfulness. Items are rated on a 5-point Likert-type scale ranging from 1 (*never true*) to 5 *(almost always or always true)* with higher scores indicating more trait mindfulness. The KIMS demonstrates adequate to good test-retest reliability ($r = .65$ to .86) in a student sample, after a 14 and 17-day time interval. Subscales also show adequate convergent validity with the Mindful Attention and Awareness Scale ($r= .24$ to .57; [22]). Lastly, in the validation study, divergent validity was shown with measures of neuroticism ($r = -.42$ to -.31),

experiential avoidance (-.35 to -.26) and dissociation (-.28; [21]). The Cronbach's alpha for this sample was .81.

The Avoidance and Fusion Questionnaire for Youth (AFQ-Y). The AFQ-Y [23] contains 17 self-report items examining experiential avoidance, psychological inflexibility, and cognitive fusion. Items are rated on a scale of 0 (*not at all true*) to 4 (*very true*). Higher scores are indicative of higher levels of avoidance and fusion. The AFQ-Y, which was intended for and normed with a child and adolescent population, has also demonstrated good internal consistency in undergraduate samples (α = .84 -.92; [24, 25]). The AFQ-Y correlates positively with depression (r = .59), stress (r = .55), and anxiety (r = .53; [25]). The Cronbach's alpha for this sample was .91.

The Religious Commitment Inventory – 10 (RCI-10). The RCI-10 [26] measures religious commitment in both intrapersonal and interpersonal domains. Items are rated on a scale from 1 (*Not at all true of me*) to 5 (*Totally true of me*). Worthington and colleagues [26] found the RCI-10 to have an excellent internal consistency reliability alpha of .93 for the full scale. The RCI-10 was also seen to correlate significantly with measures of religiosity and significantly differ from measures of morality [26]. The Cronbach's alpha for this sample was .96.

The Daily Spiritual Experience Scale (DSES). The DSES [27] measured participants' experience of divinity in their lives on a daily basis. The DSES consists of 15 items which are rated on a scale from 1 (*Many times a day)* to 6 (*Never or almost Never)*. The total score is summed and reversed. In a number of samples, Underwood and Teresi (2002) found excellent internal consistency reliability alphas. The DSES is preliminarily thought to be related to decreased alcohol consumption, improved quality of life, and positive psychosocial attributes [27]. Observed Chronbach's alpha of the DSES in this study was .97.

Measure of Religious and Spiritual Flexibility (MRSF). The MRSF [28] is a 6-item self-report measure of an individual's psychological flexibility regarding religion and spirituality. This measure uses a 7-point Likert-type scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). All items are reverse scored, and higher scores indicate higher religious and spiritual flexibility. Initial internal consistency measurements with the MRSF range from a Cronbach's alpha of .73 to .82, in both theistic and non-theistic samples [28]. The internal consistency in the current sample was .80.

Qualitative Meditation Survey. The Qualitative Meditation Survey (QMS) was designed specifically for this study. It was based on the results of a pilot study conducted by the authors, which explored common conceptions of MM. The QMS was presented as part of the demographic questionnaire and consisted of 14 open-ended questions and six vignettes about meditation related activities. Of these 20 items, six open-ended questions and one vignette were used for analyses. The vignette was chosen because it was written to be ambiguous and interpretable in multiple ways thus prompting variable responding. The six questions were chosen pragmatically, as they were the ones that were coded first by the research team. The six qualitative questions and the meditation vignette included: Q 1: *What is meditation?;* Q 2: *In general, what kind of people meditate?;* Q 3: *How do you know when you are good at meditating?;* Q 4: *Should your mind wander during meditation?* Q 5: *Do people who meditate look a certain way?;* Q 6: *What are some reasons why people meditate?;* Vignette 1: *You are walking to class when you overhear a conversation between two people. One mentions to the other that they just finished meditating for an hour and had another "supernatural experience" during the practice. In your opinion, what kind of "supernatural experience" did this individual have?*

<u>Demographics and Mindfulness Meditation Survey (DMMS).</u> The DMMS assessed age, ethnicity, primary language, religion, educational status, gender, marital status, employment, socioeconomic status and income, previous mindfulness and meditation experience, and attitudes towards these practices.

2.3 Procedure

Participants first completed the consent form online and then completed all measures in the order listed, so that qualitative responses about mindfulness knowledge and attitudes would not interfere with quantitative responses. Further, the quantitative measures were believed not to spoil the qualitative responses in this order. Qualtrics' *Force Response* feature was used in this study so that no missing data would occur in the dataset. *Force Response* requires participants to answer all questions on a given survey page before moving forward. Although the benefit of this feature is a complete dataset, the cost is that incomplete participant data is not collected and therefore cannot be analyzed.

Participants' responses were then de-identified and coding took place before analyses. Using an informal process (i.e., internet search) and a deductive analytic approach, a basic structure for initial organization of qualitative content from the survey was formed. Themes were added as qualitative data was rendered and coded; if less than five codes were added to a new theme, the codes were redistributed to a related theme. Conceptions were grouped into the following labels: large time commitment, controlling thoughts/emptiness of mind, specific populations/religious and spiritual practice, relaxation technique/stress reduction, complex practice, achievement/goal oriented, physically and mentally dangerous, self-serving/avoidance, insight/genius, and physical/mental/emotional/environmental control.

After this, a more formal coding strategy was used. Data were coded semantically in Nvivo 10 software by the first author and a research assistant. Frequency and correlation analyses were used. Approximately 50 coding hours were accrued. Consistency and variation were examined before nodes were added as new themes in the data emerged. Overall, over 20,000 references were coded at more than 40 nodes for this project. These conceptions are explored below in the results section.

3. Results

3.1 Qualitative Analysis

Using a qualitative deductive analytical approach, several key conceptions emerged from coding survey responses. Participant responses were downloaded from Qualtrics and key parts of sentences were highlighted and "moved" into nodes (similar to how a file is moved into a folder on a computer). In NVivo 10, nodes are points at which references (i.e., survey content) are coded. For example, content related to relaxation/relaxing were referenced from the survey data in the Relaxation node 459 times for the 479 participants across the 6 qualitative questions and one meditation vignette. Specific frequencies for coded nodes and word frequency can be seen in Table 1.

3.2 Quantitative Analysis

References coded at each node were exported from the Nvivo software to SPSS in a quantitative coding frequency dataset and combined with participants' demographic data. Bivariate correlations were run to examine the relationship between demographic variables and node frequencies. From this analysis, several correlations were significant (p < .05), and these relationships were examined further.

3.3 Outcomes

For these analyses, independent samples t-tests were used to compare groups on key conceptions. A Levene's test was used to assess for homogeneity of variance in each analysis. These tests proved significant (p < .05) for all run analyses, and therefore all t-values were adjusted for equal variances not assumed.

<u>Previous MM practice reported.</u> An independent samples t-test was used to compare individuals who reported previously practicing MM (n = 165) to those who reported not previously practicing MM (n = 314). Individuals who reported previously practicing MM had more conceptions related to: Focus (t(280.97) = 2.47, p = .01), Insight (t(254.58) = 3.37, p = .001), Mental Control (t(290.56) = 2.99, p = .003) , Emptying the Mind (t(280.97) = 2.13, p = .03) , and People with Ailments Using Meditation (t(243.30) = 2.40, p < .01).

<u>Willingness to practice.</u> An independent samples t-test was used to compare individuals who reported being willing to practice meditation (n = 418) to those who reported not being willing to practice meditation (n = 61). Individuals who reported being willing to practice meditation reported more conceptions related to: Ascension, t(98.35) = 2.08, p = .05, Happiness, t(108.50) = 2.65, p = .01, and Difficulty of practice, t(417.00) = 2.01, p = .05.

<u>Gender differences.</u> An independent samples t-test was used to compare male participants (n = 143) to female participants (n = 332) for coded conceptions. Female participants reported more conceptions related to: Difficulty of practice, t(331.00) = 2.01, p = .05, and Stress Relief, t(323.93) = 3.14, p = .01.

<u>Religious practice reported.</u> An independent samples t-test was used to compare individuals who reported having a religious practice (n = 161) to those who reported not having a religious practice (n = 318). Specifically, individuals who reported having a religious practice reported more conceptions related to meditation being strictly a Religious Practice, t(280.94) = -2.54, p = .01. However, there was no significant difference between these individuals for meditation being a strictly spiritual practice, t(322.79) = -.57, p = .90.

<u>Self-reported variables and conceptions.</u> After examining significant bivariate correlations (i.e., p < .05), several analyses were run using self-report measures and coded conceptions. Correlations between self-report measures (e.g., KIMS and AFQ-Y) can be seen in Table 2. With regards to the relationship between self-report variables and conceptions, several significant correlations were found.

First, trait mindfulness as measured by the KIMS was significantly positively correlated with conceptions of Ascension (r = .12, p < .001), Insight (r = .10, p < .001), and Comfort (r = .12, p < .001). Religious commitment as measured by the RCI was significantly positively correlated with conceptions of Achievement (r = .10, p < .001), and meditation being a religious practice (r = .15, p

< .001). Daily spiritual experience as measured by the DSES was significantly negatively correlated with the conception of Large Time Commitment ($r = -.10$, $p < .05$), and meditation being a religious practice ($r = -.16$, $p < .001$). Religious and spiritual flexibility as measured by the MRSF was significantly negatively correlated with the conception of Interpersonal Connectedness ($r = -.09$, $p < .05$), and significantly positively correlated with the conception of Physical Control ($r = .13$, $p < .001$), and the conception of Empty Mind ($r = .10$, $p < .001$). Last, experiential avoidance was not significantly correlated with any conceptions.

Table 1 Frequency of coded nodes for mindfulness meditation conceptions.

Node	Number of Coding References	Percentage of Content
Relaxation	459	96
Achieve Focus	359	75
Achieve Peace	316	66
Achieve Insight	310	65
Religious Practice	283	59
Stress Relief	272	57
Achieve Calm	252	53
Empty Mind	219	46
Spiritual Practice	148	31
Other Population	136	28
Mental Control	132	28
Achieve Supernatural	111	23
Physical Control	110	23
Achieve Goal	97	20
Achieve Happiness	97	20
Environmental Control	80	17
Achieve Ascension	73	15
People with Ailments	73	15
Other Practice	53	11
Achieve Centered	53	11
Achieve Openness	47	10
Avoidance	38	8
Emotional Control	36	8
People without Ailments	32	7
Personality Related	22	4
Achieve Health	21	4
Effortless	20	4
Regional Practice	12	3
Achieve Interpersonal	12	3
Drug Users	8	2
Race related	7	1

Table 2 Correlations (Pearson's r) between self-report variables (N = 479).

	KIMS	AFQY	RCI	DSES	MVM	MRSF
KIMS	-	.42**	.03	-.13**	-.05	.35**
AFQY		-	.04	.13**	.32**	-.45**
RCI			-	-.70**	-.15**	-.09**
DSES				-	-.04	-.08
MVM					-	-12**
MRSF						-

** *p* < 0.01 level; * *p* < 0.05 level

4. Discussion

Within Western culture, there have been substantial misinterpretations of meditative disciplines [19]. Within a therapeutic context, these conceptions may limit potential benefits. The current research is consistent with the notion that MM conceptions exist. In fact, the prevalence rate of conceptions as they would be relevant to a therapeutic context was high in this college sample. Most of the conceptions found were congruent with research on western cultural expectations of what mindfulness entails (e.g., relaxation, controlling thoughts; [29]). However, some novel conceptions emerged (e.g., People with Ailments Using Meditation).

Some conceptions are more prevalent than others and might require more attention and considerably more work to overcome. Further, individuals' approaches to MM, along with their conceptions of it, may look quite different based on their level of experience. Quantitative data suggests undergraduates who reported practicing meditation were more likely to reported stronger conceptions related to Focus, Insight, Mental Control, Emptying the Mind, and MM being Practiced by People with Ailments.

There are several possible explanations for this finding. First, it might be that an introduction or familiarity with MM might propagate some of these conceptions. Accordingly, these findings also demonstrate that those who report more willingness to practice were more likely to report conceptions related to Ascension, Happiness, and Difficulty of Practice. In a study examining inner city cardiovascular disease patients' attitudes toward meditation, almost half of these patients expressed interest in participating in a meditation practice to reduce stress. Given this was a college sample and not a medical one, it may still be that individuals who are willing to engage in these practices, particularly those with high levels of stress (such as cardiovascular patients), might

be even more inclined to experience their practice as being difficult, and might possibly become more troubled by a lack of attaining Happiness or Ascension directly from their practice.

Women were more likely than men to report conceptions related to Difficulty of Practice and using meditation for Stress Relief. Although there is not a clear rationale for why this particular gender difference might be present, it is clinically relevant to understand these associated features when teaching meditation and incorporating meditation into individuals' lives. Some research demonstrates that men are less likely to seek treatment for mental health problems than are women (e.g., [30]), which may in part help contextualize gender differences for meditation being used as a means of alleviating stress if meditation is thought to aid in this way. It is also possible that men have social scripts in which they are less likely to admit difficulties (e.g., [31]), which may also explain a portion of these novel findings given that limited research on this area currently exists.

Religion and spirituality seemed to play a large factor in an individual's conceptions of meditative practices. Individuals who reported having an existing religious practice were more likely than those without to hold the conception of meditation being a religious practice, but no difference existed for these individuals with the conception of Spiritual Practice. It is the second author's clinical experience that individuals of Christian faith in this region of the country hold more beliefs of meditation being a religious practice different than their own (with the exception of universal groups, such as The World Community for Christian Meditators). Given that most of this sample was Christian, our findings of this conception as it relates to religious persons mapped onto our clinical practice. Students with this frame of reference would typically make a distinction between religion and spirituality, providing support for this finding as well.

Students who reported more religious commitment were more likely to have conceptions of Meditation Being a Religious Practice and Achievement. Like all learning, people integrate new acquired knowledge with their existing knowledge. It might be that individuals who are religious and have never practiced MM would be more likely to view these practices as being more religious and devotional in nature purely based on their frame of reference. Anecdotally, individuals' responses to questions like "What is meditation?" with a religious focus tended to state answers such as "prayer" and "connecting with G-d."

In contrast, the conception of Achievement as it relates to religious commitment proves to be much more nuanced in this study. One possible reason for this correlation is the internalization of specific religious teachings. A religion which may have a return of the afterlife based on one's worldly deeds could have an influence on how the religiously committed view Achievement as it relates to meditation. That is, to meditate is to gain various qualities which could bring one "closer to G-d" and achieve/receive a life after death. It could also be that this correlation is related to the interwoven nature of intelligence and achievement. The relationship between acquired knowledge (intelligence) and achievement has been studied extensively in psychology. Speculatively, theology and religion may be one such knowledge base for those who have high religious commitment, and therefore acquiring and utilizing this knowledge holds some value of Achievement for these individuals. Another possibility may be the context of the university in that university students may be more achievement focused and therefore reported more conceptions related to mindfulness meditation. Still, given the limited nature of these findings and empirical data, pause is warranted.

Relatedly, the Family Environment Scale (FES; [32]), a measure used to assess a family's interpersonal dynamics, has 10 different subscales – two of which are Achievement Orientation and Moral-Religious Orientation. In a study by King [33] using the FES, the Moral-Religious Orientation was associated with higher academic performance in high school, as well as higher rates of college attendance in college classrooms. Additional studies suggest a correlation between religious commitment and academic achievement (e.g., [34, 35, 36]).

Students who reported more daily spiritual experiences were less likely to hold conceptions of Large Time Commitment, and meditation being a religious practice. Along with a more religious worldview, it may be that individuals who have daily experiences of spirituality and divinity have invested more of their energy in seeking divine explanations and therefore influence their perception of how MM functions. Last, students who were more religiously and spiritually flexible were less likely to have the conception of Interpersonal Connectedness, and significantly positively correlated with the conception of Physical Control, and the conception of Empty Mind. The negative correlation may demonstrate less rigid parallels between meditation and resulting interpersonal connectedness; however, the positive correlation to Physical Control and Empty Mind prove to be inconsistent with theory and practice of psychological flexibility, and merits further investigation by researchers. It may be that religious and spiritual flexibility holds different features than psychological flexibility more broadly.

Students with more trait mindfulness were more likely to have conceptions of Ascension, Insight, and Comfort. Although in the right context these features can be seen as positive and possibly even accurate conceptions of one's meditative practice, a certain level of flexibility and sensitivity is needed if these individuals are new to the practice of meditation and are attempting to incorporate the tenets of mindfulness into their practice.

Last, experiential avoidance was not significantly correlated with any conceptions. It is possible that experiential avoidance does not correlate with any specific conception due to the nature of conceptions more broadly. The content of these conceptions was likely not used as avoidance of the correct conception of MM, but rather represents differing knowledge levels related to the theoretical and context dependent understanding of MM.

4.1 Limitations and Future Directions

As a limitation to this research, it is unclear how much previous experience participants had with MM, or the kind of experience that they had. Further, the QMS questions that were included in analyses revealed no information about attitudes toward mindfulness. For time efficiency, only key questions from the measure were coded. The six coded open-ended questions were chosen because they provided information about participants' knowledge of participation. Another limitation is that no measure of distress was included, and this is especially useful in assessing how mindfulness relates to functioning as individuals are first becoming exposed to the concept. Without a distress measure, it is difficult to extrapolate how these findings apply to those who are symptomatic of mental and physical health issues. Last, although this sample was representative of the diverse university at which the data was collected, a majority of the participants were young, white, single, Christian, female identifiers pursuing higher education in the South-Central region of the USA. Findings may therefore be more tenuous for other populations (e.g., general, medical) and this restriction of sample diversity should be considered.

Future research of MM should attempt to incorporate multiple measures of mindfulness (both quantitative and qualitative) to gauge participant understanding, as well as use measures targeting mechanisms of change that are essential to the practice of MM. Researchers may also benefit from exploring how these conceptions function in a broader sample and whether they have different variations in other nonclinical samples based on participants information sources (e.g., media, psychotherapy, readings) for MM. Furthermore, understanding how these prevalent Conceptions affect client outcomes in therapy would be clinically beneficial for practitioners and clients of MM interventions.

5. Conclusions

The pursuit of conceptions about MM was in an effort to understand and provide a practical or "workable" addition to a person's practice, particularly as might be relevant to clinical work. Several conceptions were found, through both qualitative and quantitative analyses. Understanding and confronting these conceptions about MM might mitigate some of the perpetuation of future MM conceptions and encourage greater awareness, acceptance, and understanding toward this practice. In the end, it is equally important to remain flexible with how these conceptions are addressed in clinical and research contexts, and strive to understand their function they serve for clients rather than just the form.

Author Contributions

The first author primarily conceptualized this project with help from the second author who supervised the project. The second author helped the first author design the project. The first author analysed the majority of the data. The first and second authors did the majority of the writing, while the third author contributed to writing as well as conducted some analyses and worked on editing, formatting and related issues.

Competing Interests

The authors have declared that no competing interests exist.

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