Mindfulness (2019) 10:2452–2467
https://doi.org/10.1007/s12671-019-01227-2

ORIGINAL PAPER

Cross-Fertilizing Qualitative Perspectives on Effects of a Mindfulness-Based Intervention: An Empirical Comparison of Four Methodical Approaches

Pascal Frank[1] · Laura Stanszus[2] · Daniel Fischer[1,3] · Klara Kehnel[4] · Paul Grossman[5]

Published online: 27 August 2019

Abstract

Objectives Qualitative methods come along with specific methodological backgrounds and related empirical strengths and weaknesses. Research is lacking addressing the question of what it precisely means to study mindfulness practices from a particular methodological point of view. The aim of this paper is to shed light on what qualities of mindfulness different qualitative methods can elucidate.

Methods Based on interviews stemming from participants of a consumer-focused mindfulness training (BiNKA), we undertook a comparison of four different analyses, namely content analysis (CA), grounded theory (GT), interpretative-phenomenological analysis (IPA), and discourse analysis (DA).

Results Independently applying the four methods on our data material led to the following findings: CA demonstrated that the training had effects on self-awareness, well-being, and the development of ethical qualities and influenced pre-consumptive stages of participants; GT revealed the complex set of conditions determining whether and how the mindfulness training influenced the attendees; IPA highlighted the subjectivity of the mindfulness experience, suggesting that (1) different training elements have varying effects on participants and (2) it is often not the meditation practice, but other course elements that cause the effects experienced by the attendees; DA demonstrated that the course experience was influenced by subjective theories held by the participants. In particular, they showed typical strategies of rationalizing their consumption.

Conclusions A pluralistic qualitative research assists in identifying blind spots and limitations of a single method, increases the self-reflexivity, and helps to arrive at a more comprehensive understanding of mindfulness practice or other processes of covert lived experience.

Keywords Mindfulness · Qualitative · Pluralistic qualitative research · Reflexive methodology · Sustainable consumption

In mindfulness research and practice, mindfulness-based interventions (MBIs) represent a field of tremendous interest that continues to receive growing attention. MBIs constitute a class of training programs in which the participant is asked to bring "awareness to current experience–observing and attending to the changing field of thoughts, emotions and sensations from moment to moment–by regulating the focus of attention" (Bishop et al. 2004, p. 232). Recent research has investigated the effects of MBIs in areas such as medicine (Didonna 2009), psychotherapy (Germer et al. 2016), education (Schonert-Reichl and Roeser 2016), economics (Ie et al. 2014), sports (Birrer et al. 2012), and even the military (Jha et al. 2015). Additionally, dozens of systematic literature reviews and meta-analyses have summarized an overwhelming amount of individual studies, mostly confirming positive effects of mindfulness trainings on many different aspects, including health and well-being (Black and Slavich 2016; Goyal et al. 2014), emotion regulation (Hill and Updegraff 2012),

✉ Pascal Frank
pascal.frank@leuphana.de

[1] Leuphana University Lüneburg, Universitätsallee 1, 21335 Lüneburg, Germany

[2] Technische Universität Berlin, Marchstraße 23, 10587 Berlin, Germany

[3] Arizona State University, PO Box 875502, Tempe, AZ 85287, USA

[4] University Zurich/Switzerland, Winterthurerstrasse 190, 8057 Zurich, Switzerland

[5] European Center for Mindfulness, Konradstrasse 32, 79100 Freiburg, Germany

attention and cognitive performance (Eberth and Sedlmeier 2012; Zenner et al. 2014), compassion and prosocial behaviors (Luberto et al. 2017), or sports performance (Bühlmayer et al. 2017).

In view of this attention, it is not surprising that MBIs have also become subject to critical appraisal (e.g., Van Dam et al. 2018). Quantitative measurements of mindfulness—constituting the majority of mindfulness-related publications (Van Dam et al. 2018)—have particularly come under attack by different scholars. For example, a meta-study by Goyal et al. (2014) identified several methodological flaws common to quantitative mindfulness-related research, including research biases, a lack of active reference groups, and insufficient attention to placebo. More generally, it is argued that the existing quantitative instruments (see for example Bergomi et al. 2013) are barely appropriate to do justice to its "multidimensional nature" (Grossman 2008, p. 407). They instead reduce mindfulness to specific qualities that may be associated with it, but which may also be attributed to other states and/or traits and do not capture the phenomenon, e.g., an ability to maintain attention or be emotionally nonreactive. In regard to its broader meaning, "clear objective and observable [e.g. behavioral, physiological or emotional] criteria of mindfulness are unavailable" (Grossman 2008, p. 407), implying that mindfulness practice is experienced very differently from one person to another. Hence, making a quantitative, standardized approach to the phenomenon is a difficult enterprise. Grossman (2019) additionally recently showed the substantial degree to which quantitative investigations of mindfulness are fundamentally affected by the subjective influences and biases they are assumed to mitigate. As a consequence, proposals have been made to intensify the qualitative inquiry of MBIs (Garland and Gaylord 2009; Grossman 2008, 2019).

In terms of the number and diversity of qualitative studies published, it seems that this suggestion has been taken increasingly seriously. Searching for "mindfulness AND qualitative", the SCOPUS data base alone shows an increase of annual publications from 14 in 2008 to 133 in 2018. Applying different qualitative methods such as grounded theory (GT), content analysis (CA), or interpretative-phenomenological analysis (IPA), researchers have aimed to deepen the understanding of MBIs' impacts and mechanisms in a broad range of fields including psychotherapeutic settings (Williams et al. 2011), prisons (Himmelstein et al. 2012), breast cancer treatments (Schellekens et al. 2016), education (Bannirchelvam et al. 2017), the workplace (Hugh-Jones et al. 2017), or childbirth (Malis et al. 2017). Similar to meta-analyses in the field of quantitative research, first studies are now also available for qualitative mindfulness research, which attempt to synthesize the results of various studies (e.g., by using meta-ethnography, Malpass et al. 2011).

Alongside the growing interest to study MBIs from a qualitative angle, the question emerges whether a qualitative approach is, per se, sufficient to overcome the methodological difficulties related to the inquiry of the phenomenon. There are at least three reasons for doubt: firstly, while it appears obvious that qualitative approaches are suited better for reconstructing the *individual* experiences of mindfulness practice than quantitative research, they are by no means immune to error and bias (Norris 1997). To the contrary, qualitative research is prone to biases at all stages of the research process, beginning with topic selection, to data collection and analysis, and to the final step of publishing (Mehra 2002; Petticrew et al. 2008; Silverman 2000). In particular, different methodologies come along with specific distorting tendencies (e.g., Smith and Osborn 2008) and bring potential methodological perspective biases (Deady 2011), so that there is no good reason to assume that the qualitative investigation of MBIs can be exempt from these tendencies. The second reason is that research on mindfulness is particularly prone to such biases. As mentioned above, the demand for qualitative research on mindfulness is grounded in the intention to reconstruct the individual experience of the practice. Methodologies inspired by phenomenology like IPA seem to be perfectly suited for such an endeavor, as they explicitly aim at making sense of the subjectively lived experiences of research participants by interpreting their interpretations of them. However, Grossman (2008), for example, emphasized the importance of personal experience with mindfulness practices as a prerequisite for studying the phenomenon. Although Grossman referred to quantitative research, it appears no less likely that a lack of personal experience with mindfulness practices equally represents an obstacle in reconstructing the lived experience of mindfulness practitioners. At the same time, strong personal engagement in the practice or underlying research interests can also restrict researchers' objectivity toward the phenomenon (Chavez 2008), and findings on positive publication bias within mindfulness literature (Nowogrodzki 2016) provide strong evidence that this is commonly the case. Thirdly, it must be highlighted that the application of a qualitative research method, albeit allowing for a more comprehensive look at the object under investigation than is generally possible from a quantitative angle, still represents a particular perspective on this object. Such perspective, usually gained from observing small samples, entails procedures, assumptions and theoretical lenses that make certain aspects visible while others remain opaque (Morse and Chung 2003). In sum, qualitative approaches toward mindfulness practices require a critical and differentiated discussion in the same way as is the case for quantitative studies (see Grossman 2019).

This background notwithstanding, methodological reflection remains scarce in current qualitative mindfulness research. In fact, some publications do not even locate themselves within a methodological perspective (see Malpass et al. 2011 for examples). And even though most studies do (sometimes only

roughly) indicate their research methodology, their explanation remains mostly limited to general characteristics of qualitative research. For example, they argue that it is well suited for studying new areas of inquiry (Allan et al. 2009, p. 414), can provide empirical insights in order to develop the theoretical understanding of the phenomenon (Allan et al. 2009, p. 414), and allows "to explore […] experience in as open-ended a manner as possible" (Christopher et al. 2011, p. 322). Similarly, explanations for selecting a specific method are barely provided along the actual topic of mindfulness, instead depicting for example IPA and GT as approaches "for [a] more open exploration of participants experience" and CA as a "more focused and theory driven approach" (Sweeney 2016). The application of GT is mostly justified by its theory-building potential (Kerr et al. 2011), while IPA is deemed to make visible "the construction and meaningfulness of experiences" (Williams et al. 2011, p. 382). Reflexive accounts analogously remain on a rather general level, problematizing the influence of subjective perspectives and presumptions (Haydicky et al. 2017) or the degree of engagement in the research procedure (Hugh-Jones et al. 2017) on data analysis. All these papers have in common that they lack an inquiry into what it precisely means to study mindfulness practices and their effects in a concrete field of application from a specific methodological point of view. To our knowledge, no such empirical investigation of qualitative methodological analyses has yet been undertaken—despite the above-mentioned insight into the need for stronger methodological reflections.

This article sets out to contribute to this agenda. It uses data material (in-depth interviews and practice diaries) from a study of a consumption-specific MBI (BiNKA-training) carried out between 2015 and 2018. The data were made subject to a cross-methodical analysis in order to systematically compare strengths and shortcomings of different methods when looking at the effects of mindfulness training.

In total, the comparative analysis involved four qualitative approaches: in addition to the common qualitative content analysis (CA), grounded theory (GT), and interpretative-phenomenological analysis (IPA), we also included a discourse analysis (DA), as this method carries a specifically relevant, yet so far almost entirely neglected, potential for inquiring mindfulness practice. In what follows, we will illustrate how using a pluralistic qualitative method approach can cross-fertilize and overcome limitations of the application of single qualitative methods when studying mindfulness in general and the nexus between mindfulness and sustainable consumption in particular. We do that in the sense of a reflexive methodology (Alvesson and Sköldberg 2017), hoping to contribute to "a consideration of the perceptual, cognitive, theoretical, linguistic, (inter)textual, political and cultural circumstances that form the backdrop to – as well as impregnate – the interpretation" (p. 11) of mindfulness-related inquiry.

Method

Participants

The MBI was delivered to two target groups, namely university students and employees of three small and medium-sized enterprises that declared their participation in the research project beforehand (one engineering office, one market research institute, one university). In total, six training groups were implemented for each target group, resulting in a total number of 12 training groups with a maximum group size of 12 participants. The training was advertised to university students at the three universities in Berlin by means of a university-wide website connected to sports program and health promotion offerings. Employees were informed via email of the possibility to attend the mindfulness training within their enterprise. In accordance with ethical guidelines of the German Psychology Association, participation was completely voluntary, reimbursement was in the form of a remitted course fee, and personal data of different measurement times was linked via an anonymous personal code, so inferences to individual persons were made impossible. Individuals were excluded from participation when they showed serious indications of psychological difficulties, based upon a brief individual screening performed by the mindfulness trainer.

Out of $n = 137$ participants, 25 were selected after the course-attendance for semi-structured interviews, and 24 were included in the analysis (the interview guidelines can be found at http://achtsamkeit-und-konsum.de/wp-content/uploads/2015/09/Interviewleitfaden_final.pdf.). While 13 participants of the sample were chosen randomly, the other 12 were selected on the basis of most extremes in values of pre- to post-intervention change scores of the theoretically relevant quantitative scales (e.g., those who showed greatest vs. least improvement on scores putatively indexing facets of mindfulness, see below).

Procedure

Between 2015 and 2018, we carried out an intervention study called BiNKA (German acronym for "education for sustainable consumption through mindfulness training. For more information about the research project, see http://mindfulness-and-consumption.de/). The main assumption of the research project was that mindfulness training might be a promising way for fostering more sustainable consumption behavior. This assumption was supported by evidence from a systematic literature review of existing empirical, but almost exclusively, correlational, cross-sectional, studies on the nexus of mindfulness and sustainable consumption (Fischer et al. 2017). In detail, the review outlines four mechanisms according to which practicing mindfulness may possibly positively affect individuals' way of consuming, namely through

(1) enhancing concordance between attitudes and behaviors, (2) increasing well-being related to decreasing the extent of materialistic orientation, (3) fostering compassion and prosocial behavior, and (4) disrupting unsustainable habitual behavior. However, the stocktaking also revealed that empirical investigations of causal links between MBIs and consumer behavior remain practically non-existent (Fischer et al. 2017).

Given the environmental urge to transform individual consumer practices and mindfulness' potential to contribute to this aim, the research and development of the BiNKA project set out empirically to explore whether mindfulness training can, in fact, increase sustainable consumption in individuals. The main objective of the project was to provide a comprehensive empirical investigation of the relationship between mindfulness and sustainable consumption behavior, specifically whether consumption behaviors might be influenced by means of mindfulness training. For that purpose, a consumption-specific MBI was developed (BiNKA training), and a portion of curriculum of the well-established MBSR (mindfulness-based stress reduction) program developed by Jon Kabat-Zinn (1991) was used and modified as a basis for the training. The MBSR program comprises eight weekly group sessions, one additional half-day session after week 6 ("day of mindfulness") and, importantly, daily individual practice. This program consists of a variety of elements, among them formal meditation practice, group discussions and reflections, insight talks and bodily exercises, including mindful yoga. In addition to modified MBSR elements, the BiNKA training was supplemented with specific consumer education activities embedded in a framework of mindful awareness, focusing on nutrition and clothing as two key domains of sustainable consumption (Geiger et al. 2017; see Stanszus et al. 2017 for a detailed account of the training and its development, as well as Fritzsche et al. 2018 for a practical toolkit illustrating exemplary exercises).

Interviews with course participants were conducted in August and November 2016 by three senior researchers not involved in teaching the intervention, each lasting between 35 and 70 min. All interviews were audiotaped and transcribed verbatim. Before the start of each interview, participants were asked to consent to audiotaping the interview and were reminded of their voluntary attendance, as well as their right to refuse answers or stop the interview at any time. The interview guidelines consisted of two parts. The first part of the interview invited open-ended responses about participants' general experiences in the MBI and their practices at home that they deemed important to elaborate upon ("What did you experience in the training and with your practice at home?"). They were encouraged by the interviewer by means of follow-up questions to deviate into whichever direction they considered important to describe. In the second part, more detailed questions guided the interview, such as questions reflecting a general description of their eating and shopping food routines and possible changes to those behaviors over the last weeks ("Would you please elaborate on your general behavior regarding nutrition?"; "Did you experience any changes in relation to your general behavior regarding nutrition in the past weeks?"), or their understanding of consumption and sustainable consumption ("What exactly is consumption to you?", "How would you describe sustainable consumption?"). Interviewees were further asked if and how they perceived themselves more mindful, and what exactly they understood by their experience of mindfulness ("In your opinion, did you develop more 'mindfulness'? How would you know that/ how do you experience that?"). At the conclusion, they were encouraged to ask any open questions and were also informed about the state of the study and the next steps of analysis. In addition to the interviews, course participants wrote diaries reporting and reflecting on their daily mindfulness practice experiences as well as their informal mindfulness practice "homework." With the consent of participants, the diaries were collected and included into the analysis. All procedures performed in the study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Measures

The BiNKA study was predicated upon a mixed-methods design. The quantitative part aimed at empirically testing the aforementioned mechanisms of mindfulness on participants' consumer behavior. For this purpose, all participants were surveyed with a quantitative questionnaire shortly before (pre) and shortly after (post) the intervention, as well as 6 months after completion of the training (follow-up). The qualitative inquiry was integrated in the research project for four reasons: firstly, quantitative measures of mindfulness and empirical mindfulness investigations have been recently criticized and seen as insufficient sources of knowledge (see introduction). Therefore, enriching the quantitative data with in-depth interviews and course attendants' diaries could engender a broader picture of the training effects. Secondly, a qualitative approach might allow a detailed reconstruction of subjective experiences associated with participating in a specific consumer-focused mindfulness intervention, as well as provide insights into the relation between mindfulness and consumption that go beyond predetermined hypotheses derived from the systematic literature review (Fischer et al. 2017). Thirdly, the relation between mindfulness and (sustainable) consumption behavior has rarely been investigated in a longitudinal study of mindfulness training. An explorative approach toward this relation was hence also needed, given the pioneering character of the BiNKA study. Fourthly, we thought that a qualitative perspective could also provide a somewhat more critical glance at mindfulness training, a viewpoint that is often neglected given the current,

perhaps somewhat exaggerated, enthusiasm about the phenomenon (van Dam et al. 2018).

As mentioned above, the research team considered four well-established methods for doing justice to these intentions, namely CA, IPA, GT, and discourse analysis (after Keller 2011). CA is a systematic, rule-guided qualitative text analysis, which is oriented towards the methodological quality criteria of the quantitative research paradigm, but at the same time integrates the openness of qualitative research methods (Mayring 2000). CA has a number of advantages that suggest it as the most appropriate method for triangulating qualitative and quantitative findings. The primary advantage of CA appeared to be that it allows to identify course effects and to translate the already existing hypotheses on the mindfulness-consumption nexus and use them in the analytical process (e.g., Mayring et al. 2007). However, its descriptive nature would necessarily restrict both the scope for interpreting the subjective experiences of training attendees, as well as the discovery of previously unconsidered relations between the mindfulness training and individuals' consumer behavior. IPA is a qualitative method specifically tailored to make sense of peoples' lived subjective experience (e.g., mindfulness practice) and the way they personally attribute meaning to this experience (Smith and Osborn 2008). A potential drawback of IPA is that it might impede the identification of cognitive biases and socio-structural patterns expressed by individuals when talking about their consumer behavior (Frank 2017; Herbrik and Kanter 2016). GT is a method aiming at generating new hypotheses about a given phenomenon based on a systematic gathering and analysis of data (Strauss and Corbin 1997). GT was thought to allow us to combine the reconstruction of subjective experience and the discovery of supra-individual patterns concerning the mindfulness-consumption nexus, yet the intention to link it to existing hypotheses or quantitative findings on course effects might restrict or even bias its research outcome. DA, finally, appeared to be promising for the critical perspective on our MBI. DAs construe language as social interaction and are concerned with the social contexts in which discourse is embedded. Therefore, instead of interpreting participants' reports on their mindfulness experience as testimonies of the reconstruction of their personal reality, DA could shed light on the larger cultural framework shaping course attendees' prior knowledge about and expectations toward mindfulness practice.

In sum, choosing a single qualitative research methodology without a priori curtailing the research objectives turned out to be challenging. Given that systematic reflections on the potentials and limitations of different qualitative methodologies on MBIs, in general, and its relation to consumer behavior, in particular, were absent, the research team could not rely on previous empirical experiences on the matter. Inspired by similar works from marketing (Goulding 2005) and sustainability research (Nightingale 2016), it was therefore decided to transform the search for an appropriate qualitative method into a research question on its own. A pluralistic qualitative research (Frost 2011) was chosen for the qualitative research study that allowed to compare the application of different qualitative methodologies when investigating the nexus between mindfulness training and consumer behavior and provide an empirical answer to the question of what qualities of mindfulness qualitative studies elucidate, as well as how these qualities of mindfulness may relate to aspects of sustainable consumption.

Data Analyses

The different methods were each applied to the raw data. CA, GT, and IPA were mainly conducted by the qualitative core research team, consisting of two senior research fellows with multiple years of experience in applying CA and GT and also some experience with IPA. Their provisional results were regularly made subject to larger interpretation meetings that included other members of the research team. Also, upon numerous occasions, external researchers specialized in qualitative methods participated. During these meetings, the two senior research fellows presented their analytical approaches based on the data material. In case of mutual agreement, these approaches were further pursued, and otherwise either revised or rejected. In addition, Pascal Frank and Daniel Fischer ran a research laboratory at Leuphana University in which undergraduate students applied CA and IPA on BiNKA interviews in order to obtain a more independent perspective on the matter. The students' analyses provided an additional comparative framework in order to further validate our findings. DA was applied as an undergraduate thesis project supervised by the qualitative research team.

Data analysis started in January 2017 with the development of the coding scheme for CA. While the student assistants completed the coding process, the senior researchers sequentially undertook the first two steps of GT and IPA, regularly complemented by the aforementioned interpretation meetings. We completed CA in September 2018, before coming back to the last step of GT and IPA (again undertaken in sequential order). While we intended to apply each method as 'purely' as possible, we could not rule out cross-methodical influences.

Content Analysis

For the qualitative content analysis, we followed the procedure suggested by Kuckartz (2014). We used semi-open coding to guide the analysis of the material through the theoretical considerations of the overall project on the one hand, and to maintain openness to phenomena occurring in the material, on the other hand. A deductive coding scheme was developed to reconstruct the subjective experience of participating in the MBI. The quantitative hypotheses, as well as the interview guideline and the respective theoretical foundations, were used as a grid for developing a first version of the deductive

code system, which was tested against the material. In addition, inductive categories were developed alongside the coding process in order to account for the likely appearance of unanticipated effects. Subcategories were subsequently elaborated within an iterative coding and refining process until 25% of the data was unambiguously and completely categorized in accordance with the scheme. Two student assistants coded the remaining data material. Rooted in the codings, two senior researchers wrote individual case summaries, synthesizing and abstracting the central effects of the intervention and its influence on participants' consumer behaviors.

Grounded Theory

We adapted Strauss and Corbin's (1997) understanding of GT to our study's context. The previously mentioned logistical and broader methodological considerations did not allow for the iterative loop between data collection and analysis otherwise typical for GT research. However, the quantitatively grounded extreme-case selection aimed at a diversification of interviewees in terms of course effects. As suggested by Strauss and Corbin, data analysis was undertaken in an iterative three-step coding process. Firstly, each interview and the related diary were subject to an open-coding process, and categories, sub-categories, as well as early overall hypotheses, were formulated. Secondly, the axial-coding step was undertaken by comparing and applying generated categories and hypotheses to other interviews. In this step, special attention was given to the systematic search for opposing categories and contrary evidence ('flip-flop technique', Corbin and Strauss 2008) within data material. Provisional results of these processes were regularly discussed within the research team in order to include a variety of theoretical perspectives and avoid hasty conclusions, as recommended by Strauss and Corbin (1997). Thirdly, during selective coding, most relevant codes were identified and synthesized into main themes, eventually leading to an overall theory answering the BiNKA project's key research questions.

Interpretative Phenomenological Analysis

The IPA was guided by two main interests, namely to find out (1) how participants experienced the BiNKA training and (2) how (if at all) they experienced the relationship between the training and their consumption practices. We applied the IPA procedure as suggested by Pietkiewicz and Smith (2012), consisting of three steps: firstly, two independent researchers read (and listened to) the interview material several times and took notes about emerging observations and reflections on the data. Secondly, recurring notes were transformed into themes, related to the research questions. Thirdly, the senior researchers identified relationships between the different themes and then exchanged upon their findings. They developed clusters based on clearly identified and agreed upon themes in order to work out overarching patterns within the data.

Discourse Analysis

DA was conducted after the Sociology of Knowledge Approach to Discourse (SKAD) (Keller et al. 2018). By means of this research perspective, we aimed at investigating prevailing social perceptions and interpretation patterns in participants' discourse around mindfulness, and whether these patterns effected the course experience as well as the experienced relation to the participants' consumer behavior. As the SKAD analysis does not provide a cut-and-dry method, but we adapted the approach to the material as follows: firstly, we identified those text passages in the interview material in which the respondents explicitly spoke about their understanding of mindfulness and reported on their consumer behavior. This provided the base to identify patterns of interpretation, perceptions, and collective social knowledge within the scope of mindfulness and sustainable consumption. Secondly, five interviews that represented the range of such patterns were selected for in-depth analysis. These were systematically compared to experts' statements and opinions on the topic drawn from the literature in order to connect them to the prevailing ways people think of and speak about mindfulness and sustainable consumption. We then proceeded to examine the compiled ideas regarding mindfulness in the context of the intervention, to investigate if and how these ideas influenced the attendees' experience in the training.

Results

Content Analysis

Applying CA to the interview material, we were interested in the effects interviewees reported as a result of their participation in the consumption-specific mindfulness training. In accord with the aforementioned procedure, we abstracted four main categories from the codings: (1) consumption behavior; (2) pre-behavioral dispositions of consumption behavior; (3) mindfulness-related effects with the three subcategories (a) ethical qualities, (b) increased awareness, and (c) well-being; and (4) no and potentially aversive effects.

In the first effect category, a decrease in the interviewees' impulses to consume was a main theme, e.g., for meat and sugar:

> It's more of a mind thing, that I actually do like to eat meat, that I think it's tasty, but I am often forbidding myself to eat it. Especially non-sustainably sourced meat. And in the [pizza with meat] situation [during the training], I realized, I do not WANT that. I had this feeling of disgust. IGSTUX.

This often went alongside an increase in perceived self-efficacy and, in one case, the development of sustainable consumption behavior in a previously unreflected area, namely organic food consumption. The latter respondent could, however, not trace the development back to a specific practice, but spoke about the positive influence of the whole of the training:

> I did not think much of organic products beforehand [...] I am a vegan, but hmm, I thought it was a rip-off, because it is always much more expensive and basically, it's the same ingredients etc." "But, hmm, lately, I have been thinking, ok, I will spend the 30 cents extra and buy the organic product instead. KG3STU3.

In total, four out of 25 interviewees mentioned such behavioral changes as a consequence of the training.

In the second category, pre-behavioral dispositions like awareness, attitudes, or intentions are considered a prerequisite for changes of habitually unsustainable consumption patterns (e.g., Klöckner and Matthies 2004). Eight of the 25 interviewees reported effects on these pre-behavioral dispositions due to course participation. More precisely, they mentioned an increased importance of one's own social and ecological values, a strengthened intention to put those values into action as well as an increase in appreciation and gratefulness for consumption goods.

> With mindful eating, I experience the taste of every single bite with more awareness and greater appreciation, because I reflect on the origin of the products. When I then shop mindfully, I pay more heed to sustainable, organic, fair trade products. IG1STU10.

The third category, mindfulness-related effects, entails all effects that occurred in response to the development of mindfulness, some of which are potentially beneficial for the development of sustainable consumption. They do not, however, show an explicit relation to (changes in) sustainable consumption. From 25 participants, 23 reported changes in three main themes. Firstly, an increased well-being through a better capability of dealing with stress and negative emotions and a more relaxed handling of difficult situations were elaborated upon:

> I had the feeling that [through the practice] a lot of things did not bother me as much anymore, I could stay connected with myself and better observe what is REALLY happening. IG1STU2.

The second theme describes the more general development of awareness for inner thoughts and processes. Many of those realized patterns had a direct link to consumption (especially food) or were related to reoccurring behavior such as habitual reactions to stressful encounters at work or dealing with emotional turmoil. Decreased reactivity, e.g., to upcoming negative emotions, was also reported as a likely consequence of increased awareness:

> To pay more attention to myself. To consider my behavior more. This conscious dealing with emotions. In situations with both positive and negative emotions. I find a little more joy in the positive moments and can handle the negative ones better. IG2AN11.

The development of so-called 'ethical virtues' (e.g., Grossman 2015) or ethical qualities, was the third theme in this category of codings, elaborated upon by half of the interviewees. Descriptions included the evolution of equanimity in relation to oneself and others, increase in empathy, a feeling of enhanced connection to nature and fellow human beings, and increases in compassion to others and oneself:

> I am usually compassionate with my fellow humans (e.g. leaving my place in the bus for elderly people and helping them on the street), but mindfulness makes those processes conscious for me and strengthens the feeling of goodwill towards strangers. IG1STU10.

Two of the 25 participants reported to have experienced no effects from the training at all. Furthermore, a few interviewees spoke about a decrease in bad conscience when consuming unsustainably, which might result in more unsustainable consumption decisions and create adverse effects. Two course attendees also reported a higher focus on individual needs, which might also result, for example, in increased consumption or switching to less sustainable choices, e.g., taking the car instead of the train, or buying less organic food:

> In that way, the training has […] opened my eyes […], as it helped me, to accept more and to say to myself: Ok. It is like that, because, maybe there is not enough money right now, to buy organic food. IG1STU2.

To summarize, despite few effects on the actual consumption behavior, the content analysis was able to shed light on the manifold perceived influences of the training on pre-behavioral dispositions like awareness, attitudes, and intentions. Furthermore, strong effects of increased awareness about habitual behavioral and emotional patterns and development of ethical qualities were found, relevant preconditions for being able to change behavior consciously and consistently. The analysis also showed the strong variety of strength of effects in participants, yet without offering substantial answers as to why the effects were so different. It became clear that more detailed and elaborate qualitative methods would be needed to provide these answers.

Grounded Theory

The application of GT allowed inquiry more generally into what happened throughout the BiNKA training. This inquiry included but was not limited to experienced course effects. The first coding cycle led to 76 codes. These were clustered into five overall descriptive categories: (i) course effects, (ii) factors determining/influencing course effects, (iii) experiencing the relation between mindfulness and consumption, (iv) relating to the practice, and (v) talking about one's consumer behavior. Each category comprised a series of sub-categories. For example, 'course effects' summarized the sub-categories 'positive', standing for actually reported effects that were clearly explained by course participation, 'negative' representing effects hypothesized in the literature that we could actually not find and (c) potentially adverse effects regarding the promotion of sustainable consumption. Positive effects were further differentiated according to general or consumption-related effects.

When comparing the different codes within the categories, it quickly became apparent that the way participants perceived the BiNKA training as well as its effects on their consumer behavior varied strongly from one attendee to another. While some participants clearly saw a relation between the training and consumption and stated either changes of their actual consumer behavior or preliminary stages of the latter (awareness, attitudes, intention), others could not make such a connection and did not report any effects regarding their individual consumption. On the one hand, almost all participants report that the training led to an increased awareness of their inner states and processes (e.g. emotions, thoughts, needs) and an increased attention toward the social and natural environment. Moreover, the majority of course attendees mentioned positive effects on their well-being, often related to improved coping mechanisms with stress and the cultivation of ethical qualities, such as compassion, patience, openness, or equanimity. On the other hand, reported positive effects were often observed in singular situations or transiently occurred only directly after the training; hence they did not necessarily show lasting changes. In addition, we also found some course effects that could be considered as detrimental to promoting sustainable consumption. For example, some participants reported feeling more relaxed and less negative about consuming in opposition to their values, thereby reducing the affective motivation to consume in a sustainable way.

Overall, these findings led to the hypothesis that the effects of a consumer-focused mindfulness training are strongly influenced by factors independent of the actual practice. Within the data material, we could detect many of these factors, including the relation with the teacher and the group, previous experience with the practice, the time, and duration of the training (i.e., 'exposure' to the intervention) and general living conditions of the participants. Variations in subjective theories (Groeben et al. 1988) of themselves, meditation practice, consumption, and sustainability turned out to be of particular relevance for understanding course effects and judgment of the training. For example, some participants believed the practice of meditation should switch off thinking and lead to a feeling of relaxation. However, when they realized in practice that they were still thinking and becoming agitated, this led to disappointment and the impression that they did not have the ability to meditate:

> I had the feeling that it did not work properly. I mean that my mind immediately started wandering. Sometimes I had the feeling that my mind jumped from one topic to another every few seconds […]. I thought that it should or must work in a certain manner and observed that it did not work this way for me. IG1STU10.

Similar effects were observed with regard to the participants' consumer behavior. Participants who considered their consumer behavior to be morally problematic, but thought to have ignored its impacts, tended to report increased negative emotions due to the expanded consciousness about their attitude-behavior gap:

> Interviewer (Int): Did you recognize any changes with regard to your eating habits or your purchasing behavior with regard to clothes during the last weeks? Participant (P): Yes, I think so. Especially regarding clothes I started to reflect more. And I recognize that I have a guilty conscience more often. IG2AN12.

In contrast, people stating that one should not feel bad when occasionally consuming against their attitudes yet had experienced feelings of guilt experienced reduced negative emotions due to course participation:

> The course participation probably gave me more serenity in this matter. Because I do tend to have a guilty conscience when I'm aware that I cannot act in accordance with my own moral standards. In this regard […], the course helped me to accept that. IG1STU2.

In sum, GT analysis corroborated the findings of CA that the BiNKA training increased awareness of inner states and processes (e.g., emotions, thoughts, needs) and led to an increased attention toward the social and natural environment. However, how people interpreted and made use of this awareness varied significantly and seemed to be influenced by a multitude of factors. In many cases, they stayed in line with and stabilized preexisting subjective theories, leaving the impression that the BiNKA participants tended to interpret the course experience in a way such that it confirmed the expectations they held of it in the first place.

Interpretative Phenomenological Analysis

IPA was applied to find out how participants experienced the BiNKA training and how they interpreted this experience. Given the training's focus on consumption, a special interest was to find out whether participants would relate their training experiences to their consumer behavior.

In terms of general course experience, we clustered the attendees' reports into three categories, namely (a) the immediate experience of the practice, (b) the perceived effects of the BiNKA training, and (c) the perception of factors that influenced the course experience. Overall, most participants described the course attendance as positive, using adjectives as pleasant, relaxing, or centering to summarize their experience. They said that the practice helped them in decreasing rumination and becoming more in touch with the current moment by focusing on their breath or bodily sensations, which was perceived as resulting in a more attentive, conscious state of mind. However, the various elements of the training were experienced very differently by different participants. While some felt at ease with the body-scan practice and breath awareness, others stated that they quickly fell asleep when scanning their body or that observation of the breath induced a sense of nervousness.

> I felt more comfortable with certain practices than with others. For example, I could much better relate to the breath observation than to the other methods. IG2AN9.

Similarly, another practice, Metta meditation (a practice aimed at invoking thoughts and feelings of kindness) was conceived as particularly valuable by some, while others had less positive experiences with it, felt rather overwhelmed or could not relate to the technique at all:

> I tried to look at a current conflict of mine. I tried to imagine that person with whom I'm currently having difficulties and then expand my compassion to her. I think I was probably overburdened with that, because it simply did not work. I could not detach myself from my feelings. IG1STU10.

Differences between course practice and homework practice were also highlighted by the participants: while practicing at home may allow individuals to adopt exercises to their own specific needs and pace, some participants voiced their struggle to integrate the practices into their daily life. In some occasions, this led to feelings of pressure or guilt when skipping practicing or an inner restlessness when it was, indeed, done, more like a chore than a support:

> Then it was always like this: I still have to do that, to check it off somehow. In these cases [...], it felt more like a task I had to do and less like something that was good for me. Something I wanted to do for myself. IG3STU4.

The analysis also revealed a variety of factors influencing the course experience that were not directly related to the actual practice, such as the effects of the group constellation or the time of the training. For example, some attendees reported discomfort in doing the training with colleagues, which hindered the sharing and deepening of their personal experiences.

> I sometimes found the questions and techniques problematic in this group constellation. I experienced them as somewhat invasive. IG2AN9.

For others, the group turned out to be key for their positive course experience. Those participants felt a strong support by the group, because exchanges with other participants made them realize "they were not alone" with their personal difficulties.

In terms of reported effects, IPA initially revealed an increased awareness of inner states and processes, as well as an increased attention toward the social and natural environment. The majority of course participants stated positive effects on their well-being, often related to improved coping mechanisms with stress and the cultivation of ethical qualities. Nevertheless, they usually described their increased awareness or positive effects on well-being as "subtle", "not life-changing", even though one interviewee left the course with a "whole new perspective on life" (IG3AN8). In sum, the IPA showed that the BiNKA training was experienced very differently from one participant to another, albeit there was a clear tendency toward small positive immediate and lasting effects on awareness, well-being and ethical virtues, such as compassion or a feeling of connection to nature and fellow human beings.

Concerning the experience of the relation between mindfulness and consumption, the majority of course participants were theoretically able to construe a relation between mindfulness and sustainable consumption as hypothesized be a consequence of the BiNKA course (see Stanszus et al. 2017):

> I liked the pedagogical approach behind the course. The idea that people develop the insights by themselves, through mindfulness and observation and not through instruction. IG2AN12.

However, only in a few cases, participants reported actual effects on their consumer behavior. Some mentioned affective changes related to their consumption (e.g., less appetite for meat) and stated that their increased awareness for inner processes helped them better to connect to their actual needs, resulting in the avoidance of consumer goods they considered problematic (e.g., sugar, meat). In opposition to the BiNKA training's core intention to foster more sustainable consumption choices through stimulating affective-motivational

competencies among course attendees, about one third of the participants pointed out the role of the more discursive-intellectual consumer education activities and the group exchange as the important links between the training and consumption:

> Int: Do you think that such a consumer-focused mindfulness training can be useful in order to develop a more sustainable consumer behavior? P: Yes, I would think so. Especially when you are together with people that have thought about these topics beforehand […]. Some people might not have reflected upon these topics in advance, but others have done so for a long time already. And then there is an exchange. Int: So you think it's the group exchange? P: Yes, I think it's the group exchange. IG3AN8.

Some did not see any relation at all, reasoning, for example, that mindfulness training was rather "self-centered", that is, an internal affair, whereas consumption and sustainability constituted "external issues".

Discourse Analysis

Even if mindfulness is characterized as an open-minded state of pure observation (e.g., Bodhi 2013; Kerr et al. 2011), participants' experiences in an MBI are always framed in a specific sociocultural context. Not only can the personal course experience be influenced by external factors like time (e.g., the season or time of day) or the particular setting in which it occurs, but the larger cultural framework will shape the participants prior knowledge about and expectations toward mindfulness practice. Discourse analysis intends to understand individuals' life experiences and the way they generate meaning from the latter against the backdrop of this cultural framework. For this study, we aimed to reconstruct relevant patterns of speaking about and making sense of mindfulness training. In this respect, we investigated whether—and if so in which way—subjective ideas of mindfulness influenced the experience of the BiNKA training. Furthermore, we also analyzed the way people talked about their consumer behavior and investigated whether the attendees' discourse on consumption somehow differed from prevailing patterns identified in the literature on the topic.

Regarding the first line of inquiry—participants' perception of mindfulness—we found three striking interpretation schemes: the first result was the instrumental perspective on the practice. Many participants attended the course with the intention of benefiting from mindfulness on a personal level, in terms of reducing stress or gaining greater awareness in their daily life by means of the application of short mindfulness exercises. Several attendees, furthermore, stated that they expected to receive hands-on tools that could easily and time effectively be adopted to help them to become more efficient, e.g., in their work life. One participant (KG1AN1) described mindfulness as "another tool for his toolbox," which allows him to get relaxed within a short amount of time and to be ready for action immediately afterwards. Examining this finding in relation to the existing mindfulness literature, it appears that it reflects a general trend, as discussed by experts like Hyland (2017). He claimed this understanding of mindfulness represents a misuse or even abuse of the concept of mindfulness based upon original Buddhist notions of the phenomenon, because it can easily result in a contradiction to the ethical foundation of the Buddhist traditions that include kindness, compassion, detachment of material goods, and solidarity (see Grossman 2015). Mindfulness in the described context of instrumentalization is expected to offer specific help and to contribute to the solution of personal problems in an instrumental and technical way. This perception contrasts with the intervention logic of the conducted MBI as self-exploration and a time-consuming, gradual path in which altered perspectives and understandings of self, experience and the world may evolve. An example of the differences between participants' expectations and the actual underlying aims of intervention of the course could be seen by the fact that many attendees reported they did not perform or continue to practice the course exercises, or they disliked them because the expected results did not occur.

Secondly, it became apparent that many participants did not include the practice of meditation in their idea of mindfulness but, in fact, completely separated the two terms from each other. This was expressed by reports that many participants liked the idea of mindfulness but did not feel comfortable about practicing meditation. For one attendee mindfulness "is talking about certain topics and raising awareness regarding those topics […] but that has, in my opinion, nothing to do with meditation". IG1AN12.

This separation seems to be a general trend in the Western understanding of mindfulness. As Valerio (2016) demonstrated, mindfulness-related publications are often concerned with the concept of mindfulness without considering any form of meditation practice. This way of understanding represents a change in the perception of what mindfulness is, in contrast to the Buddhist traditions where mindfulness is not seen as truly practiced or cultivated without some kind of meditation practice (Bodhi 2013, p.20), and meditation and mindfulness are, moreover, inextricably interwoven. Understanding meditation and mindfulness as being two separate and distinct practices affected the BiNKA course experience insofar as many participants often did not carry out the meditation exercises, arguing that they did not consider these practices necessary for developing their state of mindfulness.

The third finding was the distinction respondents made between mindfulness and science. Many attendees seemed to struggle with considering mindfulness within a scientific

context, which could be seen in statements where mindfulness was described as something 'non-scientific'. Furthermore, many respondents associated mindfulness with notions of "esoterism", "spirituality", and "mysticism", like in the following quote:

> In fact, I'm really interested in the topic of mindfulness. But […] it always has a slightly esoteric character, which I really do not like. IG3AN10.

This linkage presented a hindrance for some participants in their experience, as their expectations were not fulfilled by the course: they expected it, for example, to "deliver more actual 'facts'" and did not consider mindfulness or meditation as an evidence-based practice (science, in contrast, was considered to epitomize evidence-based knowledge), which kept them from fully engaging in the practices.

Concerning the participants' way to talk about their consumer behavior, we found three similar discursive patterns to what current research on the topic suggests. Namely, they demonstrated a strong tendency to rationalize apparently unsustainable consumption (e.g., Frank 2017), e.g.,

> I would like to consume more sustainably […] I would really prefer if people would not treat animals just as products to satisfy their needs […], but to afford sustainability one has to earn accordingly well. IG2AN9.

Furthermore, they neutralize their own behaviors (Chatzidakis et al. 2007) and speak in hypothetical sentences when reflecting their intentions to consume more sustainably (Herbrik and Kanter 2016), e.g.,

> Personally, I almost have to accept that I have to buy bad stuff []. Even if I spend more money the T-Shirts are produced in Bangladesh […], okay maybe I would have a choice […], but then the price is for me personally too high […]. Regarding my conscience, I would really love to buy a fair-trade T-Shirt, it's not that I do not care […] but it's almost like as if you were forced to buy the bad stuff. IG1AN12.

None of the attendees reported on insights into such psychological mechanisms (as Vago 2014 suggests) or gave evidence of increased self-determination (Levesque and Brown 2007) related to consumption. Discourse on personal consumption thus seemed unaffected by the BiNKA training.

To summarize, the DA of the interview data identified several ideas and perceptions that clearly reflect broader issues that figure centrally in both the academic and public debate and notions about mindfulness. This analysis indicated that many respondents were strongly influenced by such ideas and perceptions during their participation in the BiNKA program. This underlines the potency of contextual factors and discursive patterns that are likely to influence the experience and effects of an MBI. When examining the way people spoke about their consumer behavior, the training did not seem to have much of an impact on the attendees.

Discussion

The aim of this study was to explore the results of different qualitative methods for analyzing interview data in mindfulness research. For this purpose, we investigated how participants of a consumption-specific MBI related their experiences with mindfulness and meditation practice to the thematic context of sustainable consumption. This research interest was motivated by an observed certain lack of reflection within current qualitative research on mindfulness: different qualitative methods have been applied without considering their individual strengths, weaknesses and biases with regard to the research topic. Instead of contributing to overcome the various problems related to qualitative research, an undifferentiated application of qualitative research methodologies thus risks to engender further unclarities and potentially bias and obscure research findings. Analyzing interview data from a consumption-specific MBI (BiNKA training) with four methodical angles (content analysis, grounded theory, interpretative-phenomenological analysis, discourse analysis), this study's intention has been to contribute to closing this gap and laying the foundation for a reflexive methodology (Alvesson and Sköldberg 2017) of qualitative research on mindfulness.

Overall, we found that the application of these four methods did not reveal sharply distinct understandings of the participants' mindfulness experience during this particular program or the experienced relation between mindfulness and consumption. Yet, each method did elucidate unique aspects of the research object, not revealed by the other analytic approaches: CA constituted a relatively easily applicable method that provided a quick overview on the effectiveness of the BiNKA training. It demonstrated that the training had clear effects on perceived awareness, well-being and the development of ethical qualities on the side of the participants and also indicated the potential for influencing their preconsumptive stages (values, intentions, attitudes, consumption-related awareness). GT added insight into the complex set of conditions determining whether and how the mindfulness training influenced the attendees. IPA, in contrast, highlighted the subjectivity of the mindfulness experience and its link to consumption, suggesting that (1) different training elements had varying effects on participants and (2) it was often not the meditation practice, as such, which linked the training to consumption, but rather the more general educational components embedded in the training curriculum.

Finally, DA demonstrated that the short-term mindfulness practice offered through the BiNKA training did not provide access to 'pure' or 'unbiased' experience, even though some scholarly definitions of mindfulness might suggest that can occur. Mindfulness experience in our program was rather shown to be influenced by the prevailing preconceptions and discourse on the topic (and this may have seeped in via outside influence or even via the views and biases of the MBI instructors themselves, since they are also susceptible to current sociocultural and other influences). In particular, course attendees sometimes showed typical strategies for rationalizing and legitimizing their personal consumer behaviors. In sum, each method offered distinct insights that would not have been accessible through the application of a single method. What the combination of the different methods, therefore, allowed was to take different perspectives on the research object that supplemented and enriched one another, thereby providing a more nuanced and holistic picture (Morse's and Chung 2003) of the participants' mindfulness experiences and their relation to sustainable consumption behavior during the BiNKA training.

Furthermore, the pluralistic qualitative research turned out to be a promising way to inform single methodical approaches, hence helping to avoid hasty, one-sided and biased interpretations concerning our research topic. As Alvesson and Sköldberg (2017) put it, "the researcher can very often make the empirical material more or less fit into the preferred framework" (p. 370). Depending on a researcher's personal relation to mindfulness practice, it is easy to find evidence for or against the effectiveness of such a training. Regarding the BiNKA project, some of the researchers were, in fact, actively engaged in regular mindfulness practice. An exclusive application of CA might have led to an overestimation of the positive effects of the training. On the other hand, an isolated application of DA could have prevented seeing the clear tendency of the intervention to have positive effects on awareness, well-being, and ethical virtues of the training. This allowed for a more humble, critical, and self-reflective interpretation of the data material. For example, the initial CA coding did not distinguish between singular and lasting effects of the training, thereby exaggerating the program's actual effectiveness. IPA helped to clarify this issue by elucidating this distinction in people's reports of their course experience. This example illustrates how the in-depth analysis of the individual course experience through IPA helps to get a more detailed understanding of the effects of a mindfulness training and their conditionality. Such a detailed understanding is no default part of CA application. Another case is the way people spoke about their consumer behavior and the way it was affected by the BiNKA training. Attendees would often express perceived changes regarding their consumption without actually being able to precisely describe them. Applying CA, such statements were coded as reports on the course effectiveness. However, a discourse-analysis-inspired perspective can remind us that interviews constitute an opportunity for 'moral story-telling' (Silverman 2000) and allow interviewees to "frame their accounts in a politically conscious manner" (Alvesson and Sköldberg 2017, p. 365). Against this backdrop, we discarded any kind of speculative statement on consumption-related changes unless interviewees were able to illustrate them with concrete examples.

What makes this mutual information possible is the entanglement of distinct epistemological perspectives and paradigms coming along with the different methods. As Frost (2011) points out, "using different methods to analyze data means that different ways of looking at the data are being brought to the process" (p. 150). Obviously, none of these ways is better than another. They all make unique contributions to the understanding of the phenomenon under investigation, thereby developing a more holistic understanding of the latter. CA, as applied within the BiNKA study, provided a positivist point of view, looking at observable effects resulting from the training. While GT and IPA also included positivist elements, their underlying paradigm can was primarily constructivist-interpretive: Both looked at the way participants generated meaning from their course experience. While in the case of IPA, the inquiry sticks more strongly to what the interviewees report about their subjective experience, GT analysis is not interested in the subjective experience as such, but rather aims to disclose a larger social phenomenon behind these reports. In our study, this allowed to make visible the subjective differences in experiencing and hence benefiting from the various course elements through IPA, on the one hand, while on the other hand identifying transsubjective factors influencing the course experience by applying GT. DA, finally, looked at the BINKA training from a rather critical and even deconstructive point of view, in the sense that it looked for evidence questioning the very essence of what some scholars claim mindfulness practice to be: a state of pure observation. Overall, combining such perspectives seems particularly relevant for mindfulness research, which is suffering from a positive publication bias (Nowogrodzki 2016) and a general tendency insufficiently to address and critically reflect methodological hindrances and epistemological assumptions (Van Dam et al. 2018). Enriching positivist paradigms with more differentiated constructivist-interpretive or even critical-deconstructivist perspectives might help to evaluate the effectiveness and appropriateness of mindfulness practices more accurately. Pluralistic analysis may also contribute to better understanding of what is often implicitly being conveyed by mindfulness instructors, as well as by program content, enabling us to refine teaching and practices. As this study shows, the type of qualitative analysis allows us to acknowledge mindfulness's positive potential while also recognizing its limitations, hence contributing "to surmount the prior misunderstandings and past harms caused by pervasive Mindfulness Hype" (Van Dam et al. 2018, p. 22).

Of course, a pluralistic qualitative approach to mindfulness comes along with new challenges and shortcomings. Two of these became particularly relevant in our study. Firstly, there are practical limitations to the resources and capacities (also researchers' skills) that research projects can dedicate to the qualitative investigation of MBIs. When choosing to analyze data material with different methodical lenses, the diversity of insights comes to some extent at the expense of greater depth of exploration. For example, we could only touch upon the observation that different training elements were perceived very differently from one participant to another, despite this fact's relevance for the research project. The impression that many attendees in this particular mindfulness-based intervention highlighted the more traditional consumer education activities integrated into the training as useful in terms of their learning experiences and less often the meditation practice, as such, is a very relevant finding, given that the research project sought to investigate the potential contributions of a mindfulness training to the field of education for sustainable consumption. Unfortunately, it was not possible to go back to the participants and investigate this aspect in further detail. Nevertheless, it is also clear that qualitative inquiries can never reach completion anyway, nor can related theories be finally proven or rejected on the basis of qualitative analysis (Alvesson and Sköldberg 2017). However, our arguments should not be mistaken as a naive request to multiply the numbers of methodical approaches in qualitative mindfulness research. It may not always be necessary or fruitful to fully apply several methods within a research project. Following Alvesson and Sköldberg's (2017) suggestion, it is equally possible to analyze a selected part of the data material with a different method. Furthermore, we suggest complementing a methodical perspective with partial or full application of contrasting methods and to use such a multifaceted approach as a heuristic tool to inspire one's research and theoretical considerations, as well as to raise awareness of personal assumptions and biases.

A second difficulty of a pluralistic qualitative research is that it might affect criteria such as reliability, generalizability and objectivity of the research (Frost 2011). The application of different approaches by the same researchers will inevitably influence the interpretations and might thus blur the individual findings of each method. In situations in which the proper application of a specific method stands as the focus of the research project, this can, in fact, be a problem. However, this shortcoming is compensated by the benefit to the research's comprehensibility and self-reflexivity. As discussed above, the reciprocal influence of the methods constitutes a central epistemic strength, as it enriches each approach by making visible new aspects of the phenomenon that would have remained unseen from a single methodical angle. Moreover, (qualitative) research is always dependent on the researcher, his/her specific disciplinary background, methodical training as well as interests and paradigms he/she holds (e.g., Frost 2016). In our experience, it is a great strength of using more than one method to make these more visible and hence render the interpretative process more transparent.

Limitations and Future Research

Our approach itself has a number of limitations that in the spirit of a reflexive methodical account need to be made transparent. Four restrictions seem to be particularly relevant to us. The first major limitation is that the comparison of methods was limited to the data-analysis phase only. This limitation resulted primarily from the fact that our decision to investigate the specific contributions of various qualitative methods in the field of mindfulness research was only made during the course of the research study process, thus preventing preparatory work that would have been advantageous. In particular, the interview design was not specifically tailored to a combined qualitative analysis and remained stable throughout the data collection. This entails at least two consequences: For one, method-specific procedures in the collection of data, such as the iterative entanglement of data collection and data analysis as well as the adaptation of the interview guideline, as is for example applied in grounded theory, could not be undertaken. Therefore, the potential of the different methods could not be fully unleashed. For another, the interview guidelines had a focus on the effects experienced by the interviewees due to course participation and was hence more strongly oriented toward the content analysis. This orientation most probably influenced the statements of the interviewees and hence restricted the potential findings of each method from the outset. However, the extent of this influence has not been at the focus of this research and defines an important limitation in regard to its self-reflection. Expanding the comparison to the data collection would have allowed a more detailed understanding of how data collection effects the findings concerning MBI research. Further inquiry addressing the methodical sensitivity of (qualitative) mindfulness research is needed to shed light on this aspect.

A second limitation results from the fact that the application of the different methods in our investigation was partly carried out by the same persons. Efforts were made to achieve further external validation of the study results through interpretation meetings, the inclusion of student assistants in the coding process, an undergraduate research lab and outsourcing DA to a Bachelor thesis. A more rigorously independent application of the methods for further comparative studies would be desirable and of interest. It must be kept in mind, however, that (qualitative) research is always dependent on the researcher, his/her specific disciplinary background, methodical training and specific interests, paradigms and other skills that he/she possesses. Considering this limitation, a step further in the sense of self-reflexive methodology, it might be valuable systematically to analyze researcher sensitivity in

regard to mindfulness research more generally in future research.

Third, some of the findings described above could only be too briefly touched upon, since the diversity of insights we obtained came at the expense of greater depth of exploration. Especially the role of subjective theories and the impression that the training confirmed these theories instead of making them conscious constitutes a particularly relevant line of inquiry for further research on mindfulness practice that has only been addressed briefly in this study.

Fourth and finally, it needs to be clarified that our findings concern a particular MBI, underpinned by a specific interpretation of what mindfulness is and how it may be facilitated and taught by specific people. Hence, there are good reasons to assume that other teachers and curricula might have elicited a very different pattern of response and experience. This raises two questions that remain unaddressed due to the confined scope of this study, namely (1) to what extent the findings discussed above can be generalized and (2) which role the teachers delivering the BiNKA training played in bringing about these findings, in particular with regard to how their subjective theories on mindfulness (and consumption) may have affected the attendees' course experience. Especially the latter question seems to be a very much neglected issue of mindfulness research, yet inquiring it could help understanding both program developers and teachers as to what they are actually doing and how this relates to the idea of mindfulness in general.

Despite the limitations mentioned above, we believe we have shown how pluralistic qualitative mindfulness research can be used to identify blind spots and limitations of a single method, generally increase the self-reflexiveness of one's methodological approach, and thus help to arrive at a more differentiated and comprehensive understanding of mindfulness practice. It would be desirable to intensify the method-reflexive discussion here in a joint effort to conduct not only more, but better quality, qualitative mindfulness research and, in a further step, to extend it to the combination of different methods, for example, in the field of mixed-methods studies and the combination of qualitative methods with neuroscience.

Authors' Contributions PF: designed and executed the study, coordinated and participated in the data analyses, and wrote the paper. LS: co-designed and co-executed the study, participated in the data analyses and wrote the sub-sections on qualitative content analysis, DF: co-designed the study and participated in writing the paper, KK: undertook the DA analysis, wrote the corresponding sub-sections and supported in formatting the manuscript, PG: supervised the execution the study and the data analysis and participated in writing the paper. All authors approved the final version of the manuscript for submission.

Funding Information The present study has been made possible through funding received from the German Ministry for Education and Research (BMBF) in the project BiNKA (Education for Sustainable Consumption through Mindfulness Training) under grants 01UT1416 and 01UT1416B.

Compliance with Ethical Standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflict of Interest The authors declare that they have no conflict of interest.

Informed Consent Statement Informed consent was obtained from all individual participants included in the study before their inclusion in the study.

References

Allen, M., Bromley, A., Kuyken, W. & Sonnenberg, S.J. (2009). Participants' experiences of mindfulness based cognitive therapy: "It changed me in just about every way possible". *Behavioural and Cognitive Psychotherapy, 37*, 413–430.

Alvesson, M., & Sköldberg, K. (2017). *Reflexive methodology. New vistas for qualitative research*. London: Sage.

Bannirchelvam, B., Bell, K. L., & Costello, S. (2017). A qualitative exploration of primary school students' experience and utilisation of mindfulness. *Contemporary School Psychology, 21*(4), 304–316.

Bergomi, C., Tschacher, W., & Kupper, Z. (2013). The assessment of mindfulness with self-report measures: Existing scales and open issues. *Mindfulness, 4*(3), 191–202.

Birrer, D., Röthlin, P., & Morgan, G. (2012). Mindfulness to enhance athletic performance: Theoretical considerations and possible impact mechanisms. *Mindfulness, 3*(3), 235–246.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D. & Devins, G. (2004). Mindfulness: A Proposed Operational Definition. *Clinical Psychology: Science and Practice, 11*(3), 230–241

Black, D. S., & Slavich, G. M. (2016). Mindfulness meditation and the immune system: A systematic review of randomized controlled trials. *Annals of the New York Academy of Sciences, 1373*, 13–24.

Bodhi, B. (2013). What does mindfulness really mean? A canonical perspective. In J. M. G. Williams & J. Kabat-Zinn (Eds.), *Mindfulness. Diverse perspectives on its meaning, origins and applications* (pp. 19–39). London: Routledge.

Bühlmayer, L., Birrer, D., Röthlin, P., Faude, O., & Donath, L. (2017). Effects of mindfulness practice on performance-relevant parameters and performance outcomes in sports: A meta-analytical review. *Sports Medicine, 47*(11), 2309–2321.

Chatzidakis, A., Hibbert, S., & Smith, A. P. (2007). Why people don't take their concerns about fair trade to the supermarket: The role of neutralisation. *Journal of Business Ethics, 74*(1), 89–100.

Chavez, C. (2008). Conceptualizing from the inside: Advantages, complications, and demands on insider positionality. *The Qualitative Report, 13*(3), 474–494.

Christopher, J. C., Chrisman, J. A., Trotter-Mathison, M. J., Schure, M. B., Dahlen, P., & Christopher, B. (2011). Perceptions of the long-term influence of mindfulness training on counselors and psychotherapists: A qualitative inquiry. *Journal of Humanistic Psychology, 51*(3), 318–349.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques to developing grounded theory (3rd Ed.)*. Los Angeles: Sage.

Deady, R. (2011). Reading with methodological perspective bias: A journey into classic grounded theory. *Grounded Theory Review*, 1(10).

Didonna, F. (Ed.). (2009). *Clinical handbook of mindfulness*. New York: Springer.

Eberth, J., & Sedlmeier, P. (2012). The effects of mindfulness meditation: A meta-analysis. *Mindfulness, 3*(3), 174–189.

Fischer, D., Stanszus, L., Geiger, S., Grossman, P., & Schrader, U. (2017). Mindfulness and sustainable consumption: A systematic literature review of research approaches and findings. *Journal of Cleaner Production, 162*, 544–558.

Frank, P. (2017). Warum wir Tiere essen (obwohl wir sie mögen) – sozialpsychologische Erklärungsansätze für das Fleischparadox. In J. Straub, & P.S. Ruppel (Ed.), *Kerosinfrei und vegan: das ökologische Selbst.* Psychosozial, 40(2), 1–21.

Fritzsche, J., Fischer, D., Böhme, T., & Grossman, P. (2018). Education for sustainable consumption through mindfulness. Images and objects - active methodology toolkit 9. Hedmark, PERL – Partnership for Education and Research about Responsible Living.

Frost, N. (Ed.) (2011). *Qualitative methods in psychology: Combining Core approaches.* Open University Press.

Frost, N. (2016). *Practising research*. Roulston: Palgrave.

Garland, E., & Gaylord, S. (2009). Envisioning a future contemplative science of mindfulness: Fruitful methods and new content for the next wave of research. *Complementary Health Practice Review, 14*(1), 3–9.

Geiger, S., Fischer, D., & Schrader, U. (2017). Measuring what matters in sustainable consumption: An integrative framework for the selection of relevant behaviors. *Sustainable Development, 26*(1), 18–33.

Germer, C. K., Siegel, R. D., & Fulton, P. R. (Eds.). (2016). *Mindfulness and psychotherapy (2nd Ed.)*. New York: The Guilford Press.

Goulding, C. (2005). Grounded theory, ethnography and phenomenology. A comparative analysis of three qualitative strategies for marketing research. *European Journal of Marketing, 39*(3/4), 294–308.

Goyal, M., Singh, S., Sibinga, E. M. S., Gould, N. F., Rowland-Seymour, A., Sharma, R., & Shihab, H. M. (2014). Meditation programs for psychological stress and well-being. *JAMA Internal Medicine, 174*(3), 357–368.

Groeben, N., Wahl, D., Schlee, J., & Scheele, B. (1988). *Das Forschungsprogramm Subjektive Theorien. Eine Einführung in die Psychologie des reflexiven Subjektes*. Tübingen: Francke.

Grossman, P. (2008). On measuring mindfulness in psychosomatic and psychological research. *Journal of Psychosomatic Research, 64*, 405–408.

Grossman, P. (2015). Mindfulness: Awareness informed by an embodied ethic. *Mindfulness, 6*(1), 17–22.

Grossman, P. (2019). On the porosity of subject and object in "mindfulness" scientific study: Challenges to "scientific" construction, operationalization and measurement of mindfulness. *Current Opinion in Psychology, 28,* 102–107.

Haydicky, J., Wiener, J., & Shecter, C. (2017). Mechanisms of action in concurrent parent-child mindfulness training: A qualitative exploration. *Mindfulness, 8*(4), 1018–1035.

Herbrik, R., & Kanter, H. (2016). Nachhaltigkeit - eine mächtige, normative, soziale Fiktion. *Swissfuture, 43*(1), 12–13.

Hill, C. L. M., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion, 12*(1), 81–90.

Himmelstein, S., Hastings, A., Shapiro, S., & Heery, M. (2012). A qualitative investigation of the experience of a mindfulness-based intervention with incarcerated adolescents. *Child and Adolescent Mental Health, 17*(4), 231–237.

Hugh-Jones, S., Rose, S., Koutsopoulou, G.Z., & Simms-Ellis, R. (2017). How is stress reduced by a workplace mindfulness intervention? A qualitative study conceptualising experiences of change. *Mindfulness*, 474-487.

Hyland, T. (2017). McDonaldizing spirituality: Mindfulness, education, and consumerism. *Journal of Transfomative Education, 15*(4), 334–356.

Ie, A., Ngnoumen, C. T., & Langer, E. J. (2014). *The Wiley Blackwell handbook of mindfulness*. New Jersey: Wiley.

Jha, A. P., Morrison, A. B., Dainer-Best, J., Parker, S., Rostrup, N., & Stanley, E. A. (2015). Minds "at attention": Mindfulness training curbs attentional lapses in military cohorts. *PLoS One, 10*(2), 1–19.

Kabat-Zinn, J. (1991). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness. New York: Delta.

Keller, R. (2011). The sociology of knowledge approach to discourse (SKAD). *Human Studies, 34*(1), 43–65.

Keller, R., Hornidge, A.-K., & Schünemann, W. J. (Eds.). (2018). *The sociology of knowledge approach to discourse: Investigating the politics of knowledge and meaning-making*. London, New York: Routledge Taylor & Francis Group.

Kerr, C. E., Josyula, K., & Littenberg, R. (2011). Developing an observing attitude: An analysis of meditation diaries in an MBSR clinical trial. *Clinical Psychology and Psychotherapy, 18*(1), 80–93.

Klöckner, C. A., & Matthies, E. (2004). How habits interfere with norm-directed behaviour: A normative decision-making model for travel mode choice. *Journal of Environmental Psychology, 24*(3), 319–327.

Kuckartz, U. (2014). *Qualitative text analysis (1st Ed.)*. Thousand Oaks: Sage Publications.

Levesque, C., & Brown, K. W. (2007). Mindfulness as a moderator of the effect of implicit motivationalself-concept on day-to-day behavioral motivation. *Motivation and Emotion, 31*(4), 284–299.

Luberto, C. M., Shinday, N., Song, R., Philpotts, L. L., Park, E. R., Fricchione, G. L., & Yeh, G. Y. (2017). A systematic review and meta-analysis of the effects of meditation on empathy, compassion, and prosocial behaviors. *Mindfulness, 9*(3), 708–724.

Malis, F. R., Meyer, T., & Gross, M. M. (2017). Effects of an antenatal mindfulness-based childbirth and parenting programme on the postpartum experiences of mothers: A qualitative interview study. *BMC Pregnancy and Childbirth, 17*(1), 57–68.

Malpass, A., Carel, H., Ridd, M., Shaw, A., Kessler, D., Sharp, D., Bowden, M., & Wallond, J. (2011). Transforming the perceptual situation: A meta-ethnography of qualitative work reporting patients' experiences of mindfulness-based approaches. *Mindfulness, 3*(1), 60–75.

Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research*. 1(2).

Mayring, P., Huber, G. L., Gürtler, L., & Kiegelmann, M. (2007). *Mixed methodology in psychological research*. Rotterdam: Sense Publishers.

Mehra, B. (2002). Bias in qualitative research: Voices from online classroom. *The Qualitative Report, 7*(1), 1–19.

Morse, J. M., & Chung, S. E. (2003). Toward holism: The significance of methodological pluralism. *International Journal of Qualitative Methods, 2*(3), 13–20.

Nightingale, A. J. (2016). Adaptive scholarship and situated knowledges? Hybrid methodologies and plural epistemologies in climate change adaptation research. *Area, 48*(1), 41–47.

Norris, N. (1997). Error, bias and validity in qualitative research. *Educational Action Research, 5*(1), 172–176.

Nowogrodzki, A. (2016). Power of positive thinking skews mindfulness studies trials of mindfulness to improve mental health selectively report positive results. *Nature*. https://doi.org/10.1038/nature.2016.19776.

Petticrew, M., Egan, M., Thomas, H., Hamilton, V., Kunkler, R., & Roberts, H. (2008). Publication bias in qualitative research: What becomes of qualitative research presented at conference? *Journal of Epidemiology & Community Health, 62*, 552–554.

Pietkiewicz, I., & Smith, J. A. (2012). A practical guide to using interpretative phenomenological analysis in qualitative research psychology. *Czasopismo Psychologiczne, 18*(2), 361–369.

Schellekens, M. P., Jansen, E. T., Willemse, H. H., van Laarhoven, H. W., Prins, J. B., & Speckens, A. E. (2016). A qualitative study on

mindfulness-based stress reduction for breast cancer patients: How women experience participating with fellow patients. *Supportive Care in Cancer, 24*, 1813–1820.

Schonert-Reichl, K. A., & Roeser, R. W. (Eds.). (2016). *Handbook of mindfulness in education. Integrating theory and research into practice*. New York: Springer.

Silverman, D. (2000). *Doing qualitative research: A practical handbook*. London: Sage.

Smith, J. A., & Osborn, M. (2008). Interpretative phenomenological analysis. In J. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (pp. 53–80). London: Sage.

Stanszus, L., Fischer, D., Böhme, T., Frank, P., Fritzsche, J., Geiger, S., Schrader, U. (2017). Education for sustainable consumption through mindfulness training: Development of a consumption-specific intervention. *Journal of Teacher Education for Sustainability*, *19(1)*, 5-21. https://doi.org/10.1515/jtes-2017-0001.

Strauss, A., & Corbin, J. (1997). *Grounded theory in practice*. Thousand Oaks: Sage.

Sweeney, T.B. (2016). *A convergent parallel mixed-methods investigation into the role of mindfulness in moderate to severe, persistent depression*. PhD thesis. University of Nottingham.

Vago, D. R. (2014). Mapping modalities of self-awareness in mindfulness practice: A potential mechanism for clarifying habits of mind. *Annals of the New York Academy of Science, 1307*, 28–42.

Valerio, A. (2016). Owning mindfulness: A bibliometric analysis of mindfulness literature trends within and outside of buddhist contexts. *Contemporary Buddhism, 17*, 157–183.

Van Dam, N., van Vugt, M., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., Meissner, T., Lazar, S. W., Kerr, C. E., Gorchov, J., Fox, K. C., Field, B. A., Britton, W. B., Brefczynski-Lewis, J., & Meyer, D. E. (2018). Mind the hype: A critical evaluation and prescriptive agenda for research on mindfulness and meditation. *Perspectives on Psychological Science, 13*(1), 36–61.

Williams, M. J., McManus, F., Muse, K., & Williams, J. M. G. (2011). Mindfulness-based cognitive therapy for severe health anxiety (hypochondriasis): An interpretative phenomenological analysis of patients' experiences. *British Journal of Clinical Psychology, 50*, 379–397.

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools - a systematic review and meta-analysis. *Frontiers in Psychology, 5*(603), 1–12.