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Mindfulness and interpersonal relationships: a qualitative study with university students during the COVID-19 pandemic

Mindfulness e relacionamentos interpessoais: estudo qualitativo com universitários durante a pandemia.

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Abstract

There are few studies on the impacts of mindfulness on interpersonal relationships in the context of social distancing. This study aimed to explore, through a qualitative methodology, the potential benefits of the online protocol entitled “Mindfulness-Based Relapse Prevention” for interpersonal relationships among university students during the Coronavirus Disease 2019 pandemic. A total of 112 university students participated in the intervention. Data were collected through field journals and group interviews. Content analysis was conducted using QSR NVivo 12 software. After the intervention, participants reported improved regulation of reactive responses, increased awareness of thoughts, sensations, emotions, and behaviors, and better inference of others’ emotional states. The online Mindfulness-Based Relapse Prevention protocol was perceived as a potential resource for improving interpersonal relationships among university students during the pandemic.

Keywords: College student; COVID-19; Interpersonal relations; Qualitative research.

Resumo

Existem poucos estudos sobre os impactos do mindfulness nos relacionamentos interpessoais em contexto de distanciamento social. O presente estudo buscou explorar, por metodologia qualitativa, os potenciais benefícios do protocolo “Mindfulness-Based Relapse Prevention –online” nos relacionamentos interpessoais em universitários durante a pandemia da Doença por Coronavírus 2019. O estudo foi realizado com 112 universitários que realizaram a intervenção. Foram feitos registros em diários de campo e entrevistas coletivas com os participantes. A análise de conteúdos foi sistematizada com auxílio do software Qrs Nvivo 12. Após a intervenção, os participantes relataram melhora no manejo de respostas reativas; autoconsciência de pensamentos, sensações, emoções e comportamentos; qualidade da inferência de estados emocionais em outros. O

“Mindfulness-Based Reactivity Prevention-online” foi percebido como potencial recurso para melhora das relações interpessoais entre universitários no contexto de pandemia.

Palavras-chave: Estudante universitário; COVID-19; Relações interpessoais; Pesquisa qualitativa.

Mindfulness is the ability to pay intentional attention to the present moment with openness and curiosity, and it can be cultivated through meditative practices (Kabat-Zinn, 1994). Although mindfulness practices originate from Buddhist traditions, in recent decades several secular protocols have been developed within the field of health care (Schuman-Oliveira et al., 2020). There are various Mindfulness-Based Interventions (MBIs), each designed for specific goals and target populations. These include Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy, as well as structured protocols such as Mindfulness-Based Stress Reduction, Mindfulness-Based Cognitive Therapy, and Mindfulness-Based Relapse Prevention (MBRP) (Schuman-Oliveira et al., 2020).

Mindfulness-based practices are associated with numerous well-documented benefits in the literature, including improved sleep quality, reductions in stress, anxiety, and depression, enhanced executive functioning, and decreased frequency and amount of alcohol and drug use (Chayadi et al., 2022; Dunning, 2019; Ghwadra et al., 2019; Korecki et al., 2020; Rusch et al., 2019; Schuman-Oliveira et al., 2020). Some studies also suggest that mindfulness-based interventions can foster prosocial skills, potentially having a positive impact on interpersonal relationships (Bartels-Velthuis et al., 2020; Khukhlaev et al., 2022; Pratscher et al., 2018; Yang et al., 2022). A qualitative study conducted with older adults found improvements in the quality of their interpersonal relationships and a heightened sense of community (Parra et al., 2019).

Among the various prosocial skills, mental state attribution (mentalization) stands out. This ability, which begins developing in childhood, allows individuals to form mental representations of their own and others' mental states, including beliefs, desires, emotions, and intentions (Monticelli et al., 2021). However, mental state attribution is complex and may be influenced by individual subjectivity. A mental state attribution bias (or attribution style) refers to a tendency to interpret others' mental states in a distorted manner, which may lean toward negative or positive perceptions (Couture et al., 2006). Negative attribution bias has been documented in several psychiatric conditions, including anorexia nervosa and schizophrenia, and it can influence both behavior and the way individuals relate to others (Caldarera et al., 2022; Lüdemann et al., 2021; McAdams et al., 2018).

Interpersonal relationships are essential for human development (Holt-Lunstad, 2018). Close interpersonal bonds, in particular, have a significant impact on mental health and overall well-being, serving as protective factors against mental disorders such as depression (Maier et al., 2021; Zaki, 2020). The social distancing measures, implemented in 2020 to reduce the transmission of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), considerably affected both social interactions and the mental health of the population.

During the Coronavirus Disease 2019 (COVID-19) pandemic, which began in 2020, global rates of anxiety, depression, and stress increased. In Brazil, there was a 25% rise in the prevalence of anxiety and depression disorders during the pandemic (Maia & Dias, 2020). Social distancing contributed to the deterioration of mental health and increased relational tensions in close relationships. While physical contact and interaction with others were restricted, many individuals experienced intensified and strained dynamics within family relationships or among household members.

Various social groups were impacted by social distancing, including university students. This population has a higher likelihood of developing mental health disorders compared to other groups,

making them more vulnerable to psychological distress (Menegaldi-Silva et al., 2022). According to a study by Shao et al. (2020) young people face numerous challenges during university life, such as high academic demands and the complexities of interpersonal relationships. The review found that anxiety, stress, and depression are the most common issues arising from these challenges.

The mental health benefits of mindfulness-based practices have received increasing scientific attention (Dunning et al., 2019; Janssen et al., 2018; Malboeuf-Hurtubise et al., 2021; Pan et al., 2019). However, there is still a lack of research on their potential effects on interpersonal relationships. Furthermore, most studies on mindfulness rely on quantitative methods, especially psychometric assessments. Qualitative research remains scarce, particularly studies exploring the impact of mindfulness-based interventions on interpersonal dynamics (Bartels-Velthuis et al., 2020; Kantrowitz-Gordon et al., 2018; Khukhlaev et al., 2022; Parra et al., 2019; Yang et al., 2022). Qualitative approaches allow for an in-depth exploration of human experiences and subjectivity by revealing personal meanings, perceptions, beliefs, values, and attitudes (Im et al., 2023; Pyo et al., 2023).

Given this scientific gap, the present study aims to explore university students' experiences and perceptions regarding the impacts of mindfulness on their interpersonal relationships, based on their participation in an online Mindfulness-Based Relapse Prevention (MBRP) intervention during the social distancing period of the COVID-19 pandemic.

Method

This study employed a qualitative methodology using two techniques: Field Observation (FO) and Group Interviews (GI). The objective was to evaluate the potential impacts of the online MBRP protocol on interpersonal relationships in a sample of university students.

Participants

A total of 112 university students, enrolled in undergraduate or graduate programs at institutions in the city of São Paulo and surrounding areas, participated in the study. Participants included individuals of all genders, aged 18 and older. Exclusion criteria were: presence of psychotic disorders, acute phases of anxiety and/or depression without medical follow-up, cognitive impairment, and previous participation in a mindfulness group. Students who missed three or more sessions of the intervention were not invited to take part in the group interviews.

Online MBRP Protocol

The MBRP is traditionally delivered as an eight-week group protocol with weekly two-hour sessions, aimed at preventing relapse in individuals with addictive behaviors (Bowen et al., 2015). In 2021, the protocol was adapted by the Ser-Unifesp Project (a university extension initiative by the *Universidade Federal de São Paulo* (Unifesp, Federal University of São Paulo) that offers Yoga and Mindfulness practices to the community) to target university students and broadened its focus to include general reactive behaviors (Neves et al., 2021). Due to the COVID-19 pandemic, the protocol was transitioned to an online format. An adaptation study was conducted to tailor MBRP for remote delivery. The online version comprised eight 90-minute sessions covering the following topics: 1) Mindfulness and autopilot; 2) Awareness of challenges (sensations, thoughts, and reactivities); 3) Mindfulness in daily life; 4) Mindfulness in challenging situations; 5) Acceptance and skillful

action; 6) Thoughts and reactivities; 7) Self-care and balanced lifestyle; 8) Social support and ongoing practice.

The online sessions were conducted via the Zoom platform. Each group was conducted by a trained mindfulness facilitator with more than three years of group experience, supported by a co-facilitator and two research assistants responsible for field observation. Facilitators and co-facilitators received prior training for online delivery and attended weekly collective supervision meetings.

A total of 11 online MBRP groups were conducted, with an average of 11 participants per group, totaling 112 university students. The sessions took place between May and August 2021.

Procedures

Recruitment for the study was carried out through social media platforms (WhatsApp, Facebook, and Instagram), accompanied by an explanatory video introducing the MBI and the research proposal. Interested individuals were invited to complete an initial health questionnaire for screening purposes and to participate in a videoconference. During the videoconference, detailed study procedures were presented, questions were answered, and the Informed Consent Form was sent.

The research team received prior training in data collection and documentation for both Participant Observation and Group Interviews. Throughout the entire process, the team was supervised weekly by the principal investigators.

Instruments

Field Observation: Field journals followed a standardized format and included notes on participants' statements and the activities conducted during the sessions. These observations were recorded by the research assistants during the online MBRP groups. All assistants were female health professionals who had previously completed the eight-week MBRP program. During the sessions, they kept their microphones and cameras off and did not participate actively. Collected data were immediately discussed with the facilitator and co-facilitator after each session. The notes were organized and stored in Google Drive folders with restricted access to the research team.

Group Interview: Participants who missed fewer than three sessions during the intervention were invited to participate in a Group Interview (GI) at the end of the protocol. All eligible students accepted the invitation. One group interview was conducted per online MBRP group, with a total of 53 students participating. Each interview included an average of five students, ranging from three to eight participants. The interviews were conducted by two experienced interviewers who had no prior contact with the participants. The interviewers were the study authors, all health professionals with previous experience in mindfulness. To avoid bias, the facilitator and co-facilitator were not present during the interviews.

The interview script was developed based on the study objectives, with support from experts in MBRP implementation and researchers with experience in social cognition. The script included the following guiding questions: (1) "Considering the benefits you noticed after the eight-week program, did you observe any improvement in your interpersonal relationships?"; (2) "Did people close to you notice any changes during this period?"

Data Analysis

This study used content analysis, defined as a set of methodological procedures that allow for inferences about the production of messages (Bardin, 1977). All group interviews were recorded, fully transcribed, and subjected to floating reading for the definition of analytical categories. Data from both the group interviews and field observations were triangulated by method and by researcher, involving all authors. During the triangulation process, the authors met weekly to discuss the data and define the initial categories. After triangulation was completed, the categorization and coding of the data were conducted using QSR NVivo 12[®] software (QSR International Pty Ltd, 2018).

This study strictly followed all recommendations of the Research Ethics Committee (process number: 5.202.875), and participant recruitment began only after formal approval was granted. Before the group interviews were conducted, participants were fully informed about the objectives of the study, the procedures involved, and the confidentiality of their data. Reading and signing of the Informed Consent Form occurred prior to the start of the group sessions.

Each participant was assigned an alphanumeric code to ensure anonymity during data collection and dissemination. Participants were free to withdraw or decline participation at any stage of the intervention. The code consisted of five elements: (1) the method of data collection – Group Interview (“E”) or Field Journal (“D”); (2) the semester in which the group occurred – first semester (“P”) or second semester (“S”); (3) group number (e.g., “1, 2, 3...”); (4) participant’s speaking turn (e.g., “1, 2, 3...”); and (5) participant gender – Female (“F”), Male (“M”), or Nonbinary (“NB”).

Results

The sample that participated in the online MBRP consisted of 112 undergraduate and graduate students from the health sciences, with a predominance of female participants (89.3%). The average age was 24 years ($SD \pm 3$). Among participants, 82.1% were single, 67% lived with their parents, and 57.1% were not employed at the time of the study. Additionally, 63.4% were enrolled in undergraduate programs, and 66.1% attended private institutions. Most undergraduate students were in their second or fourth year, while the majority of graduate students were in their first semester of post-graduation.

The main categories were established based on participants’ reports, the study objectives, and the relevance of each category to the discussion. Data collected from field observations and group interviews revealed the following core categories: self-awareness; perceived change by others; attribution of mental or emotional states; management of behavioral reactivity and related strategies; and differentiation from others and the external environment (Table 1).

Table 1
Description of the categories identified during data analysis. São Paulo, SP (Brazil), 2021

Categories	Description
Self-awareness	Improved self-perception of direct experiences (sensations, emotions, or thoughts) and/or of expressed attitudes and behaviors
Perceived change by others	Comments from others (people close to the participants) about perceived behavioral changes
Attribution of mental or emotional states	Ability to infer what others may be thinking and/or feeling
Management of behavioral reactivity and strategies	Ability to manage behavioral responses and apply strategies for regulating reactivity
Differentiation from others and the external environment	Ability to distinguish between internal sensations, emotions, and thoughts and what is happening outside the body

Self-awareness: Participants reported improved awareness of their own thoughts, sensations, emotions, and behaviors. This category appeared more frequently in group interviews than in field observations.

And sometimes you're not feeling well, and you can admit (...) to yourself and to others that you're a vulnerable person, that there will be moments when you just need to be quiet. Bringing awareness to ourselves is something amazing. I feel good, noticing my body, my thoughts, and not being so hard on myself (...). (DP476F)

(...) But I had a situation where I knew I could have gone too far if it weren't for the course (...). So I stopped, I noticed it, and I said, 'No! Enough! That's my limit.' I was able to recognize that limit and everything I could have done, and I know I would have crossed it if it weren't for the course. (EP13F)

Perceived change by others: Participants reported that people in their social circles noticed behavioral changes during the online MBRP sessions. This theme emerged only in the group interviews.

My therapist, last week during my session, said, 'I don't know if you've noticed, but you've been less impulsive in your decisions and not reacting so strongly to things going wrong.' So, yeah, the person who noticed something was my therapist. (EP33F)

My mom noticed, she even asked, 'Wow, you seem so much lighter. What have you been doing?' That's when I told her I was doing the course. And my friends (...) said they noticed a difference too, not that I was calmer, but that I was standing up for myself more, which had always been really hard for me. I couldn't stand up for myself, and then I'd keep overthinking everything. But now I'm getting better at that. (E276F)

Attribution of mental or emotional states: Participants reported an improved ability to infer others' mental and emotional states. This category appeared in both field journals and group interviews.

I noticed some improvements (...) knowing and understanding what's happening from another perspective (...) with other people (...) realizing that things aren't necessarily personal. (DS735M)

(...) I used to be the kind of person who thought I already knew what someone was going to say and would finish their sentences (...). Now I ask whether the person is talking to me or just in front of me. Because sometimes, someone just wants to vent, they're not asking you to solve their problem (...). They just want to talk, and that's it. (EP23F)

Management of behavioral reactivity and related strategies: Participants described positive changes in managing their reactivity, particularly through the use of the STOP practice (Stop, Take a breath, Observe, Proceed). This brief mindfulness technique, used in the MBRP protocol, involves pausing to notice bodily sensations, breathing, broadening awareness, and responding mindfully to triggers. STOP was the most frequently mentioned strategy. This category was present in both data sources.

She [participant] went through a challenging situation during the week. She said she has a neighbor who kills plants, and she would always curse at him (...). But this time, when she saw him, instead of cursing, she chose to say that she takes good care of the plants and asked him, kindly, not to damage them. (DP142F)

When I put something somewhere and then I go looking for it and it's not there (...). I get so upset and would already start yelling, saying a bunch of things (...). But then I'd breathe, pause, do the STOP practice, and think, 'It's no use, I'm not going to yell.' Then I'd ask, 'Did you take it? Did you put it somewhere?' We stopped fighting a lot because of that. I started using STOP a lot in these situations. (EP31F)

Differentiation from others and the external environment: This category reflects participants' ability to distinguish between their internal experiences (sensations, emotions, and thoughts) and external circumstances. Their accounts demonstrated increased anchoring in the present moment and an enhanced ability to differentiate between internal and external experiences, which contributed to more mindful interpersonal interactions. This category appeared in both field journals and group interviews.

(...) It's always been really hard for me to witness other people's crises (...). Over the last few weeks, in crisis situations, I felt like I was in slow motion, observing what was going on around me. I think I managed to feel less anxious and less afraid in those moments. (EP22M)

"It wasn't about him [my boyfriend]; it was stuff that had stressed me out throughout the day. One silly little thing he said would spark this huge catastrophe, and I'd get angry. I started to notice that (...), and it happened automatically. Something that would've made me argue with him before no longer did. (ES73F)

Discussion

This study aimed to qualitatively examine university students' perceptions of the potential impacts of the online MBRP on their interpersonal relationships. Participants reported that during and after the online MBRP intervention, they experienced improvements in bodily and behavioral self-awareness, attribution of mental and emotional states to others, management of behavioral reactivity and related strategies, and differentiation between self and others in social contexts. Students also reported that people close to them had noticed behavioral changes during the intervention period.

Mindfulness practices are tools that stimulate the integration of neural regions related to cognition, attention, and sensory processing. In various studies, participants with higher levels of mindfulness showed increased functional connectivity in brain regions associated with attentional control, interoception, and executive function (Finkelstein-Fox et al., 2018; Łoś et al., 2020; Parkinson et al., 2019; Schuman-Olivier et al., 2020). The ability to remain present and attentive during interpersonal interactions appears to enhance relationship quality and promote more assertive communication (Hardie et al., 2022). In the present study, participants described improvements, during and after the online MBRP, in their attentional quality during interactions with others, along with enhancements in their interpersonal relationships. Thus, although mindfulness protocols tend to emphasize self-perception, this skill appears to transfer naturally to social relationships.

University students also reported using mindfulness practices in social situations, which brought various benefits to communication, such as managing reactivity and maintaining greater attentional presence in interactions. According to the existing literature, mindfulness has the potential to improve anger management, support social relationships, and can be practiced specifically within the context of interpersonal interactions (Félix-Junior et al., 2023; Karremans et al., 2017; Kok & Singer, 2017).

A 2018 study found that novice meditators showed increased connectivity between the amygdala and the ventromedial prefrontal cortex after a mindfulness intervention, along with decreased amygdala activation, which was associated with reduced emotional and behavioral reactivity (Kral et al., 2018).

Mindfulness involves attentional regulation, enhanced awareness of bodily sensations, emotions, and thoughts, as well as behavioral inhibitory control (Schuman-Olivier et al., 2020).

A systematic review conducted by Harvard University found that mindfulness training improved interoceptive accuracy, increasing individuals' ability to identify physiological states and the sensory experiences of such states (Schuman-Olivier et al., 2020). Mindfulness may therefore serve as a valuable tool for enhancing interoceptive regulation, especially through practices that direct attention to the body (e.g., body scans, mindful movement), which help strengthen neural pathways related to interoception.

Bodily, emotional, and behavioral self-awareness allows for better understanding of others' emotions and behaviors (Miller & Verhaeghen, 2022). Another study has shown that traits of mindfulness are associated with qualities such as friendship and interpersonal relationships. According to the authors, this association is mediated by the individual's capacity to consider both their own needs and those of others, which may lead to improved attribution of others' emotional and mental states and a reduction in attribution bias (Pratscher et al., 2018).

Improved attentional presence in relationships, bodily self-perception, and greater accuracy in inferring others' mental and emotional states may contribute to clearer differentiation between internal and external events. Participants in this study reported an enhanced ability to distinguish between internal bodily experiences, such as sensations, emotions, and thoughts, as well as environmental stimuli following the MBI. These perceived benefits may be advantageous for improving interpersonal relationships.

The COVID-19 pandemic and associated physical distancing had significant impacts on the mental health of young people, particularly university students. Given the perceived benefits reported by students in this study, mindfulness may serve as a valuable tool for enhancing the quality of interpersonal relationships, which is an important protective factor against mental health disorders such as depression and anxiety (Lieneck et al., 2021; Zaki, 2020). Mindfulness practices may therefore represent a valuable support strategy for this population in challenging contexts of social distancing or isolation.

Final Considerations

This study is not without limitations. As a qualitative online investigation, it involved a limited and specific sample, and the lack of in-person contact with participants made it impossible to observe their environments during the group sessions. Additionally, the sample consisted exclusively of undergraduate and graduate university students from the state of São Paulo (Brazil). Despite these limitations, it is important to highlight that few studies have investigated this topic using mindfulness protocols not specifically designed to improve interpersonal relationships. Furthermore, although qualitative in nature, the present study included a large number of participants and employed triangulation of methods and researchers.

The online MBRP may be a promising tool for improving interpersonal relationships in settings such as schools, families, and workplaces. However, this is an inference based on qualitative observations with university students during the pandemic and should be further investigated using quantitative approaches and with other populations. Future studies should consider randomized controlled trials involving university students and other target groups. Expanding the quantity and diversity of research would help strengthen the evidence base.

Furthermore, it is important to note that MBRP was originally developed for relapse prevention in individuals with alcohol or substance use disorders. Future research should therefore examine its potential benefits not only for these individuals but also for their interpersonal relationships and family dynamics.

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