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RESEARCH

From Retreat to Reality: A Qualitative Study of How Adolescents Apply Mindfulness One Month After a Weeklong Retreat

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Abstract

Objectives Mindfulness programs are increasingly delivered to adolescents to help them navigate emotional and social challenges, yet little is known about how they apply these skills after program completion. While most research has focused on short-term, school-based programs and intrapersonal outcomes, this qualitative study explored how adolescents integrated mindfulness into their lives one month after participating in an intensive, weeklong retreat.

Method Fifteen adolescents (*M*age = 16.74 years, *SD* = 1.58 years; 73% girls, 27% boys; 53.3% White, 6.7% African American, 6.7% East Asian, and 33.3% Multiracial) completed interviews one month after a six-day mindfulness retreat. Participants reflected on retreat takeaways and described how they applied mindfulness to personal and social challenges. Data were analyzed using a three-cycle coding process to identify patterns in intra- and inter-personal applications.

Results Adolescents described intra-personal applications, such as self-awareness and regulation (100% of adolescents; e.g., regulating thoughts and emotions), practicing self-compassion and acceptance (73%; e.g., being less self-critical), and gaining a broader perspective (60%; e.g., focusing on what matters). They also reported inter-personal applications, including navigating social anxiety and building connections (73%; e.g., using mindfulness to reduce social apprehension), engaging in compassionate communication (67%; e.g., active listening and providing emotional support), and greater social awareness and attunement (53%; e.g., practicing empathy and perspective-taking). All adolescents described experiences in both domains.

Conclusions This study offers insights into how adolescents integrate mindfulness into daily life after an immersive retreat and suggests such experiences foster transferable skills supporting developmental needs. Implications for contemplative science are discussed.

Preregistration This study is not preregistered.

Keywords Mindfulness retreat · Adolescent development · Qualitative research · One month

In recent years there has been a surge of interest in delivering mindfulness interventions to adolescents to support their development. This enthusiasm has been fueled not only by theoretical appeal but also by a broader cultural and scientific belief in the power of mindfulness to promote well-being during adolescence—a developmental period marked by heightened emotional sensitivity, identity exploration, and vulnerability to mental health challenges (Roeser & Pinela, 2014; Wilson & Dumornay, 2022). Early quantitative studies suggest that mindfulness training can reduce stress and improve emotional outcomes for adolescents (Black et al., 2009; Burke, 2010; Greenberg & Harris, 2011), yet the current state of evidence paints a more complex picture. In particular, large-scale, universally delivered school-based mindfulness programs have produced mixed or null effects, leading scholars to critically reassess the effectiveness of these approaches (Galla, 2024; Kuyken et al., 2022). In response, researchers are increasingly exploring alternative settings and delivery methods for mindfulness training (Medvedev & Krägeloh, 2025), including whether

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more intensive formats, such as mindfulness retreats, may offer a promising context to foster positive social and emotional development among youth who voluntarily engage in such experiences (Tumminia et al., 2022).

Despite the proliferation of mindfulness programs for youth, most studies rely on quantitative evaluations conducted in schools or clinics. These studies typically focus on health outcomes such as reductions in clinical symptoms or improvements in attention and behavior (Phillips & Mychailyszyn, 2022). While valuable, quantitative outcomes can obscure how adolescents experience, internalize, and apply mindfulness in daily life. Qualitative methods are especially well-suited to uncover the nuances of how adolescents personally experience mindfulness and its personal and social relevance in their daily lives (Lindahl et al., 2017). This is particularly true in immersive settings like retreats, where adolescents may engage with mindfulness differently than in school-based programs—experiences not easily captured through standard pre-post assessments. As such, little is known about how adolescents apply the skills and insights acquired from mindfulness training to navigate social-emotional challenges in everyday contexts. Do adolescents adopt specific strategies that help them regulate emotions, manage stress, or engage with others more effectively? What aspects of mindfulness training resonate most, and how do they transfer these lessons into real-world situations over time?

To better understand how mindfulness may shape adolescents' lived experiences, it is important to first consider how mindfulness has been conceptualized within developmental and psychological research. Rooted in early Buddhist traditions (Anālayo, 2003), mindfulness has been adapted in Western psychology as a secular construct that encompasses two interrelated yet distinct components: the self-regulation of attention and a nonjudgmental acceptance of present-moment experience (Bishop et al., 2004). The self-regulation of attention involves consciously monitoring immediate experiences, such as thoughts, emotions, and bodily sensations, while nonjudgmental acceptance refers to an open, curious, and nonreactive stance toward whatever arises in awareness (Lindsay & Creswell, 2017). Mindfulness can be understood both as a naturally varying psychological disposition across individuals (Baer et al., 2006; Brown & Ryan, 2003; Warren et al., 2023) and as a trainable skill that can be cultivated through meditative practices (Bluth et al., 2015; Galla, 2016; Metz et al., 2013). A mindful orientation toward present-moment experience can enhance cognitive flexibility (Farb et al., 2007; Grabovac et al., 2011), allowing individuals to disengage from ruminative thinking and emotional reactivity (Tumminia et al., 2020), adopt more adaptive coping strategies (Lindsay & Creswell, 2017) and foster greater social connection and positive interactions with others (Lindsay et al., 2019).

Cultivating greater mindfulness may be particularly beneficial for adolescents. Adolescence is a developmental period marked by increased vulnerability to and the onset of mental health challenges, including anxiety and depression (Mojtabai et al., 2016; Steinberg, 2007), often exacerbated by elevated stress levels (Grant et al., 2004). Many adolescents also face normative developmental stressors, including academic demands (e.g., maintaining high grades, preparing for college), social challenges (e.g., navigating peer relationships and romantic dynamics), and increasing expectations around autonomy and identity formation (Crone & Dahl, 2012; Eccles & Roeser, 2011). At the same time, adolescence represents a window of opportunity, a period of heightened neuroplasticity in which brain systems supporting self-regulation, social cognition, and metacognitive awareness are particularly malleable to intentional mental training (Giedd, 2008; Roeser & Pinela, 2014). This coincides with emerging psychosocial needs for competence, belonging, and autonomy, as well as motivations for meaning, mattering, and self-transcendence (Roeser & Pinela, 2014). Given that adolescence is characterized by both vulnerability to stress and opportunities for growth, mindfulness may serve as a particularly valuable developmental resource by strengthening emotional regulation, expanding perspective-taking, and fostering greater reflective awareness of self and others. In doing so, mindfulness may support the development of a healthier and more integrated identity, one that balances individual well-being with relational attunement and a growing desire to contribute meaningfully to others.

While mindfulness-based interventions have shown promise for adolescents' well-being, the evidence remains mixed. Recent findings suggest that universal, school-based programs have shown some benefits under specific conditions, but also yield limited or inconsistent effects (Galla et al., 2024; Kuyken et al., 2022). In contrast, some evidence suggests greater benefits may emerge from interventions that are either targeted toward adolescents experiencing elevated distress or who voluntarily engage in mindfulness training (Biegel et al., 2009). Beyond tailoring to participant characteristics, researchers are also exploring the impact of context, particularly immersive, out-of-school environments (Akiva et al., 2023). An emerging line of work has examined multi-day mindfulness retreats, which provide adolescents with extended opportunities to engage in diverse mindfulness practices within a concentrated, autonomy-supportive setting (Galla, 2016, 2017; Tumminia et al., 2022). Preliminary findings suggest that such retreat contexts may promote deeper internalization of mindfulness skills and create unique developmental opportunities for emotional processing, identity exploration, and relational growth alongside peers.

A few quantitative studies offer empirical support for the benefits of meditation retreats on adolescent well-being.

In a study of 132 adolescents who attended a weeklong retreat, Galla (2016) found moderate-to-large increases in mindfulness and emotional well-being (e.g., reduced rumination, greater life satisfaction) immediately post-retreat which were maintained over a three-month period. In a subsequent quasi-experimental study, Galla (2017) reported that adolescents who participated in the retreat exhibited greater improvements in self-regulation (e.g., reductions in depressive symptoms) and in emotional functioning (e.g., increases in gratitude and positive affect) compared to a wait-list control group. Although these findings suggest that retreat-based mindfulness may yield enduring benefits, they do not capture how adolescents internalize and apply what they have learned in everyday life; questions best addressed through qualitative inquiry.

Indeed, quantitative studies focused on programmatic health outcomes tell only part of the story. Qualitative research offers a valuable and complementary approach, one that captures adolescents' lived experiences and the nuanced ways they integrate mindfulness into their daily routines and social worlds. An expanding body of qualitative research illustrates how adolescents perceive and articulate the internal and social benefits of mindfulness training (Dariotis et al., 2023; Kerrigan et al., 2011). From a relational and developmental lens, it is important to distinguish between *intra*-personal skills—those involving internal experiences such as self-awareness, emotional regulation, and self-compassion—and *inter*-personal skills, which refer to social capacities including empathy, perspective-taking, and effective communication (Roeser et al., 2023). While many qualitative studies emphasize intra-personal outcomes, emerging evidence suggests that adolescents also report meaningful changes in how they relate to others (Tumminia et al., 2022). Qualitative studies also provide insight into how adolescents integrate mindfulness into everyday life beyond structured program settings.

A growing body of qualitative and mixed-methods research suggests that adolescents report intra-personal benefits following mindfulness training, such as greater self-awareness, emotion regulation, and more adaptive mindsets. Early studies of eight-week mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982) programs delivered to youth in clinical settings provide initial evidence of these benefits. For example, in interviews conducted within four weeks of completing an eight-week MBSR program, urban youth ($N = 10$; ages 13–19) living with HIV described key changes in their lives including increased awareness and acceptance of thoughts and feelings, improved coping with daily stressors, greater focus during schoolwork, and a fundamental shift in how they viewed their overall health (e.g., exercising more and greater medication adherence; Kerrigan et al., 2011). In a related mixed-methods study, all adolescents ($N = 10$; ages 13–19; half living with HIV) interviewed one month after completing an eight-week MBSR program reported continued use of at least one mindfulness technique, with many attributing improvements in physical health (e.g., better sleep, more energy, less stress) and academic performance (e.g., increased concentration and confidence) to specific practices like meditation, mindful walking, and yoga (Sibinga et al., 2011). Findings from this early work, while valuable, derive from relatively homogeneous clinical samples of urban youth. Moreover, the qualitative analyses were embedded in broader evaluations and focused on corroborating quantitative program outcomes, an approach that may inadvertently narrow the lens on how adolescents integrate mindfulness into daily life.

Recent studies of school-based mindfulness programs with non-clinical adolescent populations echo earlier clinical findings and document intra-personal benefits (Dariotis et al., 2023; Schussler et al., 2021). In a mixed-methods systematic case study, Schussler et al. (2021) interviewed adolescents ($N = 9$; ages 16–17) one month after completing an eight-week school-based mindfulness intervention (Learning to BREATHE; Broderick & Metz, 2009). Adolescents most frequently reported improved stress management (88%), and all participants (100%) described using mindful breathing in emotionally challenging, high-stakes contexts such as before academic exams and athletic performance. Greater mindfulness, described as enhanced awareness of thoughts, emotions, and bodily sensations, emerged as the second most commonly cited benefit. However, while all adolescents described meaningful intra-personal benefits, surprisingly fewer than half ($n = 4$; 44%) mentioned changes in their inter-personal interactions as a result of the program and only a few instances among those who did. A notable strength of the study was its move beyond generalized themes by quantifying the proportion of adolescents who reported each benefit. Still, the relative scarcity of inter-personal findings likely reflects the study's analytic framework rather than a lack of such experiences. Specifically, the study utilized qualitative data to help explain observed quantitative changes, employing a deductive, top-down approach with outcome codes mapped onto predefined intra-personal constructs (e.g., internalizing symptoms, emotion regulation, stress, self-compassion). This approach, while well-suited for understanding therapeutic processes and health interventions (Elliott, 2002), may inadvertently narrow the scope of adolescents' reported experiences after mindfulness training.

By contrast, using a more open-ended qualitative approach, Dariotis et al. (2023) conducted focus groups one week after an eight-week school-based mindfulness program and found that adolescents described many of the same intra-personal benefits: (1) improved stress management and a greater sense of calm, which were the most frequently reported; (2) increased focus and awareness; and (3) the use of mindful breathing to regulate emotions in

high-pressure situations such as exams and athletic events. Importantly, adolescents in this study also described a range of inter-personal gains, which we examine in greater detail in the following section. Together, qualitative and mixed-methods studies in clinical and school-based settings reveal how adolescents experience intra-personal benefits of mindfulness such as enhanced self-awareness, emotion regulation, and self-compassion across diverse contexts. At the same time, they raise a critical question: Do adolescents extend these internal capacities into their relationships and social lives following program completion, and if so, how?

Although the literature heavily emphasizes outcomes at the intra-personal level, there is qualitative evidence suggesting that adolescents also experience and report inter-personal benefits following mindfulness training. In the studies described earlier, adolescents reported general improvements in their relationships with family and friends, often through less judgment and negativity (Kerrigan et al., 2011) or by being more aware of their stress and in turn reducing their reactivity and hostility toward others (Sibinga et al., 2011). For example, adolescents reported using brief breathing techniques to regulate emotional responses during inter-personal conflict. One adolescent recalled applying this strategy to de-escalate an argument "I was about to get in an argument. I just sat there and I took three breaths and did my own little counting in my head and took three more breaths. And I was actually calm and left the argument—just let it be" (p. 4; Sibinga et al., 2011). Despite the generality and limited specificity of these themes, such findings suggest that the post-program impacts of mindfulness may extend beyond emotion regulation, health, and academic engagement to influence conflict management and relationships.

Building on these inter-personal themes, Monshat et al. (2013) provide deeper insight into the progression of mindfulness as a developmental process embedded in relational contexts and time. One week after completing a six-week mindfulness training program, healthy adolescents and young adults ($N = 7$; ages 16–24 years) described experiences of mindfulness that evolved across distinct phases, moving from distress and reactivity (e.g., self-doubt and emotional volatility) to gaining more stability (e.g., disidentifying with self-critical thinking and consciously controlling emotions). Eventually, many described increased confidence, competence, and social awareness (e.g., insights and application) suggesting that mindfulness facilitated more intentional and reflective inter-personal engagement. These results support the notion that as adolescents cultivate intra-personal skills, they may begin extending them to social interactions (Colaianne et al., 2023), a transfer of competencies that remain underexplored.

One of the rare studies to offer a detailed account of both intra-personal and inter-personal experiences following mindfulness training is Dariotis et al. (2023). In this qualitative study, adolescents ($N = 19$; $Mage = 14.9$ years) from marginalized urban communities participated in focus groups one week after completing an eight-week school-based mindfulness program (The Mind in Action, or T-MIA). Participants described intra-personal growth in the form of increased emotional awareness, cognitive clarity, and intentional self-regulation. Meditation and breathing practices were frequently cited as tools for promoting calm and managing stress during everyday challenges such as academic demands, sibling conflict, and athletic performance. In addition, youth also reported significant inter-personal gains, captured in a theme unique to the mindfulness group: enhanced emotional intelligence. Adolescents described learning to anticipate emotional reactions in themselves and others', regulate impulsive responses, and approach social situations with greater empathy and perspective-taking. These inter-personal shifts often emerged from a deeper recognition of others' emotions and life situations and were supported by specific mindfulness practices, including loving-kindness meditation. Finally, adolescents shared how they applied mindfulness strategies across everyday contexts, including school, home, and peer interactions, as well as sharing mindfulness techniques with family members to help others manage stress. Despite these encouraging findings, the study's brief follow-up period (i.e., one week) raises questions about the durability of these inter-personal benefits and how adolescents continue to integrate mindfulness over time.

Collectively, the current review suggests that following mindfulness training, adolescents report a range of intra-personal benefits, including increased self-awareness and emotional regulation, greater acceptance of internal experiences, and enhanced self-compassion. While less frequently documented, emerging evidence indicates that adolescents may extend these internal skills into their social lives, describing inter-personal applications such as managing conflict, engaging in empathy and perspective-taking, and practicing more compassionate communication. These findings point to the possibility that adolescents not only internalize self-regulatory strategies but also enact them relationally and utilize mindfulness to navigate social tensions and foster connection. Nevertheless, much of the qualitative literature to date has relied on clinical samples or small-scale, school-based interventions with limited follow-up periods and relatively narrow lines of inquiry. As recent analyses indicate, many school-delivered mindfulness curricula tend to prioritize self-regulation at the expense of relational skill-building (Colaianne & Falcone, 2025; Doyle Fosco & Schussler, 2025), and this curricular imbalance is often reflected in interview protocols that focus disproportionately on intra-personal benefits. Roeser et al. (2023) argue that such patterns reflect an overly individualistic and

instrumental framing of mindfulness in schools, emphasizing internal regulation over relational, developmental, and contextual dynamics. Consequently, there is a need for studies that intentionally elicit both intra- and inter-personal experiences and that examine how adolescents themselves describe the ways mindfulness enters their relationships and social worlds over time.

We can reasonably expect that, if provided the opportunity after program completion, adolescents will describe a variety of both intra-personal and inter-personal applications of mindfulness in their lives. Why? Developmentally, adolescence is marked by heightened emotional reactivity, self-criticism, and cognitive rumination, alongside developmental needs for competence, autonomy, and identity coherence (Roeser & Pinela, 2014). These conditions may make intra-personal skills cultivated through mindfulness—such as self-awareness, emotional acceptance, and self-compassion—especially relevant for managing identity-related stress, reducing self-critical thinking, and fostering psychological resilience. Simultaneously, adolescence is also a time of expanding social worlds and deepening motivation to belong and contribute. As peer networks widen and adolescents begin navigating more complex social environments, they encounter new challenges such as social comparison, conformity pressures, and potential exclusion (Killen et al., 2009; Somerville, 2013), as well as rich opportunities for connection and contribution. Notably, adolescents become increasingly motivated to contribute meaningfully to others and seek opportunities to matter within their peer groups, schools, and communities (Cobb et al., 2015; Gootman & Eccles, 2002; Roeser & Pinela, 2014). Given these dynamics, it would be surprising if adolescents did not report applying mindfulness inter-personally through skills such as perspective-taking, empathy, and active listening—not only to manage social tensions but also to strengthen existing relationships and form new ones (Hall et al., 2021; Marshall et al., 2020), particularly when mindfulness is cultivated in immersive contexts with curricular elements that target both personal development and relational learning.

Interviewing adolescents after a multi-day mindfulness retreat may provide a particularly rich opportunity to gain deeper insights into how they apply the knowledge and skills acquired to their everyday lives for several key reasons. Unlike school- or clinic-based mindfulness programs that are spread out over weeks with less daily engagement, multi-day retreats offer an immersive environment devoted to mindfulness practice in which adolescents engage in multiple hours of meditation per day, often without access to cell phones. These settings are typically staffed by highly experienced mindfulness teachers and function as developmental "incubators," offering concentrated exposure that may foster deeper internalization of mindfulness concepts and increase the likelihood that adolescents will experiment with and apply these practices in meaningful ways after the retreat. Retreats often incorporate a diverse curriculum through which adolescents engage in a wide array of meditative practices (e.g., breathwork, body scans, self-compassion, and mindful movement; Tumminia et al., 2022) as well as structured reflective exercises like journaling and guided introspection. Importantly, they also include relational practices less frequently taught in school-based mindfulness programs (Doyle Fosco & Schussler, 2025; Schussler et al., 2024), including peer-led workshops, small group discussions, group compassion exercises, and mindful communication dyads. Because of this, adolescents who participate in retreats may be particularly well-positioned to provide rich, nuanced accounts of how mindfulness has shaped their thoughts, emotions, behaviors, and inter-personal relationships. Post-retreat interviews thus offer a valuable opportunity to examine whether and how mindfulness insights gained in an immersive, relationally supportive setting translate into real-world social and emotional situations. Until now, however, qualitative and mixed-methods studies of mindfulness practice in retreat contexts have largely been limited to adult samples (Kornfield, 1979; Lindahl et al., 2017; McClintock et al., 2019).

Grounded in a developmental contemplative science perspective that adolescence is a time rich with opportunities for self-discovery and relational growth (Roeser & Pinela, 2014), the current investigation sought to build on prior work and provide a rich description of how adolescents apply mindfulness in their daily lives after participating in a weeklong, intensive mindfulness training retreat. By exploring adolescents' narratives and reflections one month after the retreat, we aimed to uncover specific ways mindfulness skills were internalized and applied beyond the retreat setting and how adolescents integrated insights from mindfulness practice into the evolving intra-personal and inter-personal aspects of everyday life. The primary research questions that guided our inquiry were: (1) How do adolescents apply what they have learned from a mindfulness retreat to their daily lives? (2) What skills or strategies do they use to navigate the social-emotional demands they face?

Method

Participants

The current sample consisted of 15 self-selected youth ($M_{age} = 16.74$ years, $SD = 1.58$; range = 14 to 19 years) who participated in one-on-one interviews one month after enrolling in a six-day mindfulness retreat in the Northeastern United States during summer 2019. Based on self-reported demographic information, 53.3% of participants identified as White ($n = 8$), 6.7% as African American ($n = 1$), 6.7%

as East Asian ($n=1$), and 33.3% as Multiracial ($n=5$); 73% identified as female ($n=11$), 27% identified as male ($n=4$). Only 13.3% ($n=2$) reported never practicing mindfulness meditation before the retreat, whereas 86.7% ($n=13$) had prior experience. Importantly, iBme offered scholarships and a tuition structure that was commensurate with family income to ensure equitable access for all interested youth. Additionally, 53.3% ($n=8$) were attending their first retreat, and 46.7% ($n=7$) had attended multiple retreats. A large majority (86.7%; $n=13$) indicated during their interview that they had practiced formal seated meditation since returning home.

The 15 participants in the current examination were part of a larger mixed-methods study of teen retreats involving a total of 23 youth (out of 53 youth enrolled in the retreat; Tumminia et al., 2022). To assess potential follow-up interview selection bias, chi-square tests of independence and independent-samples t tests were used to compare adolescents who completed the follow-up interview ($n=15$) with those who did not ($n=8$). As shown in Online Resource Table S2, follow-up interview participation was not significantly associated with age, racial identity, prior meditation experience, first-retreat status, pre-retreat mindfulness, or pre-retreat perceived stress. However, gender was significantly associated with follow-up interview participation ($\chi^2(1, n=23)=4.96$, $p=0.026$, Cramér's $V=0.46$), such that girls were more likely than boys to participate in the follow-up interview. Additional comparisons suggested that completers and non-completers did not systematically differ in their retreat-related experiences, including changes in mindfulness and perceived stress from pre-retreat to post-retreat, coded experiences of well-being and distress during the retreat, or planned post-retreat meditation practice (Table S3). Notably, the final sample's ($n=15$) pre-retreat perceived stress scores were comparable to adolescents in a prior study of the same retreat program ($N=79$; Galla, 2017).

Given prior evidence that adolescents with previous retreat experience may differ from first-time retreat participants (Tumminia et al., 2022), we conducted additional exploratory subgroup analyses comparing first-time retreat participants with those who had prior retreat experience; results are reported in Online Resource Table S4. Notably, prior retreat experience was not associated with adolescents' intended mindfulness practice plan after the retreat, which was collected at posttest, or with follow-up interview qualitative code frequencies.

Procedure

All procedures were approved by the University of Pittsburgh Institutional Review Board. The current study is a secondary analysis of qualitative data collected as part of a larger mixed-methods investigation (Tumminia et al., 2022), which included self-report surveys, daily diary entries, focus groups, and one-on-one follow-up interviews. The present study focuses exclusively on qualitative data collected during one-on-one follow-up interviews, which have not been previously analyzed or published.

One month after the retreat, research personnel contacted participants via email to invite them to reflect on their post-retreat experiences from the past month in a 30-min interview. The one-month follow-up interval was selected to balance feasibility and minimize attrition while allowing adolescents ample time to return to daily life and integrate mindfulness in everyday contexts (e.g., school, home, and peer relationships) while remaining close enough to the retreat experience to recall and describe their experiences in detail. Interested adolescents scheduled a voice call via Skype during which the lead researcher conducted a one-on-one, semi-structured interview. All interviews were audio-recorded with a digital voice recorder with participants' consent. Participants who completed the one-month follow-up interview were compensated $15 for their time and contributions.

The six-day residential mindfulness retreat, held in the Northeastern United States, was offered through Inward Bound Mindfulness (https://inwardboundmind.org), a non-profit organization that hosts residential retreats for adolescents and young adults in the United States and abroad. Four experienced mindfulness teachers supported by 17 adult volunteers facilitated the retreat, with an adolescent-to-adult ratio of approximately 3:1. Daily activities included guided meditation (e.g., breath awareness, body scans, self-compassion, compassion for others), mindful movement, wisdom talks, small group discussions, and adolescent-led workshops (e.g., Communication in Crisis, Skip the Small Talk, Relational Awareness, Improv). Participants also engaged in 4–5 h of silence per day to cultivate concentration, nonreactive awareness, and kindness. See Tumminia et al. (2022) for more detail on the retreat structure and activities.

Measures

Demographics

Adolescents self-reported their age, gender identity (male, female, or open response), racial/ethnic identity, prior mindfulness experience ("Have you practiced mindfulness meditation before?" [yes/no]), and prior retreat experience ("Is this the first time you are attending a mindfulness meditation retreat?" [yes/no]). If they had previously attended retreats, they also reported the number of prior retreats. Additional demographic comparisons with the broader retreat population and the original study sample are presented in Tables S1 and S2 of the Online Resource.

Follow-up Interview Questions

Table S5 provides the full set of questions used in the one-month follow-up interviews. During these interviews, adolescents responded to prompts about their mindfulness practice, reflections on the retreat, and perceived benefits since returning home. To assess how mindfulness skills extended beyond the retreat context, participants identified key takeaways ("What was the most important thing you learned on the retreat?") and described personal benefits ("How has it benefited your personal life since your retreat experience?"). They also explained how they applied mindfulness to everyday challenges ("How have some of the mindfulness skills you've learned help you to face or deal with challenges in your daily life? For example, work, school, relationships?") and commented on whether they noticed changes in their interactions with others ("Have you noticed any changes in the ways you interact with the people in your life since the retreat?").

Data Analyses

Research personnel transcribed the follow-up interview audio files verbatim. A research assistant then independently reviewed and verified audio transcriptions for accuracy.

Guided by a phenomenological approach (Creswell & Poth, 2016; Krägeloh, 2019), our analysis aimed to understand how adolescents made meaning of their retreat experience, particularly how mindfulness translated into their everyday lives. Phenomenology emphasizes subjective experience and seeks to distill the essence of participants' internal perspectives. This approach was especially appropriate for the current study, which explored how adolescents personally understood and described the influence of mindfulness on their emotional and social lives. However, acknowledging Krägeloh's (2019) critique that phenomenological reduction can inadvertently objectify raw, pre-reflective experience, we intentionally retained participants' verbatim, in-the-moment language during coding. All qualitative analyses were conducted in Dedoose Version 10.34 (Socio-Cultural Research Consultants, LLC, 2025).

The first author and primary coder, relatively new to mindfulness training, brought a fresh analytic perspective, while the second and third authors contributed extensive mindfulness experience which enriched analytic discussions. Importantly, the third author (and second coder) attended the retreat and directly observed the context, grounding the analysis in firsthand experience. The Online Resource provides more details on the coding scheme, including coding definitions, data sources, chunking criteria, and coding rules summarized below.

Qualitative Coding Scheme

To identify commonalities across participants' reflections, we conducted a cross-case analysis, a strategy for examining multiple individual cases in parallel to uncover recurring themes and patterns. This method allowed us to move from rich, individual stories to broader insights into how mindfulness was experienced and applied across the sample.

We used a three-cycle hybrid coding approach and incorporated both inductive and deductive strategies (Saldaña, 2015). In first-cycle coding, we applied descriptive coding, an inductive technique that allowed codes to emerge organically from the data without imposing a predefined structure. This involved identifying key words and phrases that captured participants' experiences (e.g., "practicing empathy" and "engaging in perspective-taking"). Once initial codes were assigned, we proceeded to second-cycle coding, where we employed pattern coding to organize first-cycle codes into broader thematic categories based on conceptual similarities (e.g., grouping "practicing empathy" and "engaging in perspective-taking" under a higher-order code such as "social awareness & attunement" within the "Inter-personal" category).

To further refine the coding scheme, we applied axial coding in a third cycle to merge related codes, eliminate low-frequency codes, and establish connections between concepts (Saldaña, 2015). For example, we consolidated overlapping codes such as "self-kindness" and "less self-criticism" under the broader category **"**self-compassion & acceptance." While some codes were merged, removed, or relabeled for coherence, coded excerpts were not removed but rather recoded to ensure conceptual alignment with the refined code definitions (Glaser, 1978).

Consistent with prior work with this sample (Tumminia et al., 2022), we developed a structured codebook that included clear definitions for each code and exemplar quotations drawn directly from the data (Creswell & Creswell, 2017). The codebook served as a shared reference to ensure reliability across coders and was iteratively updated throughout the analysis. Before each coding cycle, the first author consulted with co-authors to review the scope and wording of each code, reduce redundancy, and reflect on how emerging categories aligned with or diverged from theoretical expectations (Miles & Huberman, 1994). These collaborative refinements were documented through analytic memos and informed second- and third-cycle coding decisions. Table 1 presents the finalized codes and definitions and Table S6 provides exemplar quotations. To address threats to coding reliability and the trustworthiness of qualitative findings, the third author independently coded a random subset of forty excerpts (approximately one-third of all coded excerpts) across suggested codes and categories. We assessed interrater agreement between the first coder and

Table 1 Codebook used for coding intra- and inter-personal experiences in daily life post-retreat

Category	Code	Subcode	Definition
Intra-personal	Self-Awareness & Regulation	Regulating Thoughts	Recognizing, managing, or reappraising difficult thoughts with openness and curiosity, without suppression
		Regulating Emotions	Applying mindfulness strategies or adaptive mindsets to process and manage difficult emotions in real time
	Self-Compassion & Acceptance		Responding to personal challenges with kindness and self-acceptance rather than self-criticism, and demonstrating greater trust in one's abilities
	Gaining a Broader Perspective		Applying mindfulness to reassess and 'take a step back' in difficult situations and focus on what is truly important
Inter-personal	Social Awareness & Attunement	Practicing Empathy	Recognizing and resonating with the emotions of others in daily interactions
		Engaging in Perspective-Taking	Understanding others' experiences and viewing situations from multiple angles
	Compassionate Communication	Active Listening	Fully attending to conversations and listening without immediate response, and responding with greater care and thoughtfulness
		Providing Emotional Support for Others	Offering comfort, care, and support to others during difficult moments
	Navigating Social Anxiety & Building Connections		Applying mindfulness strategies to reduce social apprehension and foster connections

This table presents the final coding framework used to analyze adolescents' post-retreat experiences, including categories, codes, subcodes, and definitions of intra- and inter-personal mindfulness applications

second coder which resulted in 90% agreement, which is above the consensus minimum acceptable interrater agreement (80%) in qualitative literature (McHugh, 2012). Coding disagreements often involved related constructs such as distinguishing empathy from perspective-taking and were resolved through discussion and refinement of code definitions. The Online Resource provides further detail on disagreements and their resolution.

To assess the total frequency and percentage of adolescents who reported each type of experience, we calculated the total frequency and percentage of adolescents who reported each code type using a code-application matrix in Dedoose (see Table 2 for results).

Results

All participants described applying mindfulness to both intra-personal and inter-personal domains (see Table 2). Intra-personally, adolescents reported cultivating and experiencing greater self-awareness and regulation, including instances where they used mindfulness strategies to manage difficult emotions and thoughts, practiced self-compassion and acceptance, and overall gained a broader perspective on daily stressors. Inter-personally, adolescents described using mindfulness to navigate social anxiety, build meaningful connections, engage in compassionate communication through active listening and emotional support, and increase social awareness and attunement by practicing empathy and perspective-taking.

Intra-personal Skills and Knowledge

Self-awareness and Regulation

Every adolescent reported at least one intra-personal experience (100% of adolescents; total intra-personal experiences = 65), with self-awareness and regulation as the most commonly described. Within this category, regulating emotions was mentioned most frequently (75%; total regulating emotions experiences = 23). Adolescents described drawing on mindfulness strategies from the retreat to quickly recognize and manage strong emotions in daily life. One 16-year-old boy described using mindfulness to regulate a wide range of emotions during conversations with others, explaining how the practice helped him stay grounded and remain attentive in real time: "I found that being more mindful has helped me deal with emotions that may have arisen, if I'm feeling anxious for example, if I'm feeling scared, happy, or frustrated I'm able to work through that better and not have it take over… not have it be a major part of the experience. I've been able to focus more on what's going on at that

Table 2 Code frequency distribution and coverage across participants

Intra-personal				Inter-personal			
Code (Subcode)	Frequency	*n*	%	Code (Subcode)	Frequency	*n*	%
Self-Awareness & Regulation	**34**	**15**	**100**	Social Awareness & Attunement	**15**	**8**	**53**
Regulating Thoughts	11	9	60	Practicing Empathy	7	5	33
Regulating Emotions	23	12	75	Engaging in Perspective-Taking	8	6	40
Self-Compassion & Acceptance	**18**	**11**	**73**	Compassionate Communication	**17**	**10**	**67**
				Active Listening	9	7	47
				Providing Emotional Support for Others	8	8	53
Gaining a Broader Perspective	**13**	**9**	**60**	Navigating Social Anxiety & Building Connections	**20**	**11**	**73**
Total	**65**	**15**	**100**	**Total**	**52**	**15**	**100**

Underlined codes represent higher-order codes. Code percentages (%) represent the percentage of adolescents who reported each experience out of 15 total adolescents. Bolded values represent totals for each higher-order code

moment and what the person is saying, rather than getting lost in my thoughts." Similarly, a 17-year-old girl described how she now quickly recognizes difficult emotions as they arise and uses breathing techniques to calm herself down: "When I find myself getting upset or stressed or angry or something, I've recently been able to catch it pretty soon to the start. And I try to practice a little bit of mindfulness and be like 'Oh, what am I feeling? How does that feel in my body? Why am I feeling this?' And go through some questions like that trying to figure out what's happening. And then take a couple deep breaths and then I end up being a little calmer."

Adolescents also reported regulating thoughts; defined as recognizing and engaging with difficult thoughts without suppression (60% of adolescents; total regulating thoughts experiences = 11). When asked about key retreat takeaways, a 14-year-old girl described her biggest takeaway as her shift from previously suppressing difficult thoughts to now acknowledging her thoughts in a healthier way by saying "I think it has really impacted my life. Previously when I would have intrusive thoughts or I would have thoughts that I didn't like I would push them away as quickly as possible, but now I feel a lot more connected to those thoughts and when they do pop up, I'm able to acknowledge them in a healthy way, rather than sweep them under the carpet and hope that they don't come back." Similarly, a 15-year-old boy described how he has been able to disrupt ruminative thinking and create space from self-critical thoughts: "I've become aware of like, my brain and my mind spinning out a lot of self-doubt and acknowledging, and then I'll sort of… another part of me will realize that like, it's just my mind it's not like true or it's not something I should fixate on. And then I can kinda lift myself back out of that with just like… it's just mind chatter. And then just try to let it go. It might come back but I can just let it go again."

Self-compassion and Acceptance

The next most common type of intra-personal experiences adolescents reported were practicing self-compassion and acceptance (73% of adolescents; total practicing self-compassion and acceptance = 18). A 14-year-old girl shared that "The most important thing I learned was self-love probably. And self-acceptance." She went on to explain how she carried this mindset into daily life: "I've been able to take the reasons that I felt that like self-acceptance into my practice outside of the retreat, and it's just kinda like poured into my life. I'm trying to be less critical and self-deprecating and like, most aspects of my life have been really positive." Similarly, a 17-year-old girl described a profound takeaway from the retreat as developing greater acceptance of her mind and body: "I think it was probably just something about like self-acceptance and emphasized I'm like I'm gonna be with my brain for the rest of my life and I might as well be comfortable with it. Or like, I'm gonna be in my body for the rest of my life, so I might as well appreciate it kinda thing."

Gaining a Broader Perspective

Over half of adolescents reported that after the retreat they were able to 'take a step back' and adopt a broader perspective on what matters in challenging situations (60% of adolescents; total broader perspective experiences = 13). Describing this newfound lens, a 14-year-old boy explained how mindfulness helped him clarify priorities during academic and work-related tasks: "In terms of work, one of the things that I think mindfulness is so helpful to me is it allows me to kind of gain perspective and I think that is especially true for work because it helps you kind of realize and take a step back and think what you need to do and what's vital and what's really important for your success." A 17-year-old

boy described a similar experience in the context of everyday stressors, noting that a broader perspective helped him respond less reactively while driving: "I notice that like I am definitely less reactive to the things around me, like in the real world. Even just things like driving if like someone cuts me off I don't yell, it's just like 'Oh, it's okay, they probably just made a little mistake.' Whatever, it is not a big thing, I'm just way easier to brush little things off like that, they just truly don't matter."

Inter-personal Skills and Knowledge

Adolescents also reported a range of inter-personal benefits in their lives after the retreat. Notably, all participants described at least one inter-personal experience (100%; total inter-personal experiences = 52; see Table 2). These were grouped into three primary categories: social awareness & attunement, compassionate communication, and navigating social anxiety & building connections.

Social Awareness and Attunement

In addition to reporting greater self-awareness and regulation as described above, adolescents also described social experiences reflecting a greater ability to understand other people's experiences and adopt their perspective since the retreat (53% of adolescents; total experiences = 15). Almost half of adolescents reported an experience of perspective-taking (40% of adolescents; total perspective-taking experiences = 8). Demonstrating perspective-taking in action, a 17-year-old girl described her experience as follows: "In terms of relationships, it helps in first of all realizing that someone…like realizing the perspective of someone else. And I think it allows you to get a differentiation from intention and action. Like often we see an action and we automatically assign an intention and I think being mindful, at least for me allows me to stop that immediate connection. So, I think because of that I can be more compassionate towards people, and also not get affected as much emotionally by the actions of others." Adolescents noted that this enhanced perspective-taking also extended to family interactions. For example, a 16-year-old boy reflected on his previously contentious relationship with his older brothers and how he now pauses to acknowledge their viewpoints before responding: "Now I feel like it is easier to just stop and have a conversation with them and be like, 'Hey, listen this is my point of view, I understand why you're upset' kinda thing. Before, it was like 'This is my side, I only care about my side, I don't care about your side' kinda thing, as most siblings are."

Adolescents also reported experiences of practicing empathy for others (33% of adolescents; total practicing empathy experiences = 7), where they described how they recognized and were able to embody and understand other thoughts and emotions across various contexts. While reflecting on his personal growth since the retreat, one 18-year-old boy explained that: "When it comes to other people's stress I feel like I've just become more empathetic, in general, and that kinda ties back to the whole, you know, realizing and noticing the depth of people. I've been really able to help a lot more in stressful situations than I could previously, just because I have a better handle on the person that I'm dealing with."

Compassionate Communication

A majority of adolescents (67%; total compassionate communication experiences = 17) described using mindfulness techniques learned on the retreat to support more thoughtful and responsive communication. Specifically, about half of adolescents described instances in which they were better able to engage in active listening (47% of adolescents; total active listening experiences = 9), which entailed fully attending to conversations and listening without reactivity or immediate response. A 16-year-old boy shared: "So, I think I really try to use it when I'm thinking about social situations and social interactions, and really being present in the conversation and listening, and also like not just thinking about what I want to say next." Several adolescents also explicitly linked their deepened ability to actively listen to the communication workshop they attended during the retreat. One 15-year-old girl reflected: "I did the communication workshop, I forget which day it was, but I felt that helped, because we talked a little bit about active listening. I try to apply that when I interact with all kinds of people, especially when someone's opening up to me I can kind of think back to the workshop and remember to practice active listening."

Adolescents also reported experiences of providing emotional support to the people in their life during difficult moments (53% of adolescents; total providing emotional support experiences = 8). When asked whether she'd noticed any changes in how she responds to others' stress since the retreat, a 17-year-old girl explained: "When people come to me and they may be stressed and just kinda like, telling them 'it is temporary. You have support if you need it.' It is something I guess I've learned from…it really is impactful and really helps." Building on this theme, a 16-year-old boy described how the loving-kindness meditation gave him new confidence to comfort his peers: "I think that because of the loving kindness meditation, I can kinda offer a little bit more compassion towards people when they're stressed. … Before the retreat, when people were stressed it made me really uncomfortable, and now I feel a little bit more like, compassionate and uh a little bit more like I guess, I want to help those people instead…and I feel like I have those skills at least a little bit."

Navigating Social Anxiety and Building Connections

The most common type of inter-personal experiences adolescents reported was their ability to better navigate social anxiety and build meaningful connections (73% of adolescents; total navigating social anxiety experiences = 20). They also described applying mindfulness strategies to reduce social apprehension, remain grounded during conversations, and open up to others more authentically. When asked whether she had noticed any changes in her interactions with others since the retreat, an 18-year-old girl replied: "Compassion and understanding are the big things…I have a fair bit of like social anxiety. It happens more in like one on one interactions I think in real life and so I've started to practice mindfulness within those conversations and noticed how my body tenses up and stuff and that has helped. It's just made me more open I think, which has made people want to be around me more which has then strengthened our relationship." Another adolescent highlighted that a key lesson she had begun putting into practice after the retreat was the importance of opening up to others to build connections: "I think knowing and realizing that reaching out and opening up, even though it seems extremely scary, it is something that is really beneficial. During, this whole experience, I have been finding it really hard to adjust, but I have been finding that reaching out to people, even people I barely know and just open up then I am able to really create relationships and be able to talk out how I'm feeling and afterward feeling so much better. I think that is one thing that retreat has taught me, especially because of the community it has."

Discussion

The present study utilized a qualitative approach to explore how adolescents integrate the skills and insights gained from mindfulness training into their daily lives after participating in a weeklong intensive mindfulness retreat. Across interviews, adolescents described a wide range of intra-personal applications such as regulating difficult emotions and thoughts, fostering self-compassion and acceptance, and gaining broader perspective. They also reported inter-personal applications, including practicing empathy and perspective-taking, communicating with greater compassion, and navigating social anxiety to build meaningful connections. Notably, every adolescent reported at least one intra-personal and one inter-personal application. Importantly, these insights emerged one month after the retreat, indicating not only immediate uptake of mindfulness practices but also their continued internalization and use over time. Taken together, these findings can be understood within the broader qualitative literature on adolescent mindfulness.

As expected and consistent with prior qualitative and mixed-methods work, adolescents reported a variety of intra-personal applications of mindfulness in the weeks after the retreat. Consistent with earlier qualitative work (Kerrigan et al., 2011; Monshat et al., 2013), adolescents (75%) described using mindfulness to recognize and regulate emotions in real time and help them stay grounded during intense affective experiences such as stress, frustration, or self-doubt. Adolescents (60%) also described how they regulated their thoughts by shifting from avoiding difficult thoughts to acknowledging them with greater openness, paralleling findings from Schussler et al. (2021) who reported adolescents used breathing practices to regulate academic stress. A substantial proportion (73%) also described practicing greater self-compassion and acceptance, aligning with work showing that mindfulness reduces self-criticism and harsh self-evaluations among youth (Barcaccia et al., 2022; Bluth et al., 2015). Across interviews, adolescents articulated how they drew on these skills when navigating academic pressures, emotional fluctuations, and moments of insecurity. Our findings extend existing evidence by capturing how these intra-personal capacities were applied flexibly and spontaneously across daily contexts one month after training, an important contribution given that most previous qualitative studies assessed experiences immediately post-program.

Building on intra-personal skills and internal regulation, a key contribution of this study is the emergence of inter-personal applications of mindfulness. Adolescents reported instances where they used mindfulness to practice empathy or engaged in perspective-taking in everyday interactions (i.e., social awareness and attunement; 53%), findings that build on prior research where adolescents used mindfulness techniques to regulate emotions during social conflicts (Sibinga et al., 2011). Over half of adolescents also described moving beyond reactive self-regulation to proactive relational engagement in social situations through compassionate communication (67%), using mindfulness to attend to others more fully during conversations (e.g., active listening) and extend comfort and care to others during difficult moments (e.g., providing emotional support). These results extend the work of Dariotis et al. (2023), who observed adolescents' heightened sensitivity to social dynamics following a school-based program and showed that such relational mindfulness practices may persist beyond the immediate post-intervention period. Indeed, in prior work, adolescents described moments of genuine connection and extending kindness to others during the retreat (Tumminia et al., 2022), experiences that may have scaffolded their ability to extend mindful awareness into home and school relationships (Akiva et al., 2023).

A particularly notable finding was that 73% of adolescents described using mindfulness to navigate social anxiety

and build connections. They reported grounding themselves during conversations, staying present during moments of apprehension, and opening up more authentically to others. These accounts extend prior work by illustrating how mindfulness may support both the reduction of interpersonal avoidance and the fostering of relational closeness (Lathren et al., 2021). One month after the retreat, adolescents in our study continued to draw upon mindfulness to navigate complex social environments, suggesting the potential for enduring interpersonal benefits that transfer across a variety of contexts. It is also possible that intrapersonal regulation influences interpersonal capacities. For example, feeling more grounded and accepting internally may enable adolescents to engage more openly with others (Pratscher et al., 2018).

The immersive retreat context and its varied curricular elements likely played a central role in supporting the breadth of intra- and inter-personal applications observed. Retreats provide sustained exposure to diverse mindfulness practices within a socially integrated environment, including shared silence, group living, daily meditation, reflective dialogue, and peer-led workshops, which differ substantially from briefer, school-based programs. These structural features may create a developmentally potent environment in which adolescents can practice internal awareness and test and refine inter-personal skills such as active listening, empathy, and compassionate communication in real time (Black, 2015). This stands in contrast to school-based mindfulness programs, which typically emphasize intra-personal content and less time devoted to relational skill development (Colaianne & Falcone, 2025; Doyle Fosco & Schussler, 2025; Roeser et al., 2023). These results also parallel other immersive developmental contexts, such as summer camps, that promote empathy, belonging, and social-emotional growth through shared experience (Spielvogel et al., 2024). By offering adolescents a socially rich and emotionally safe environment, retreats may help cultivate inter-personal capacities that are essential to developmental tasks such as building friendships, strengthening communication skills, and navigating social anxiety.

Collectively, these findings spotlight the developmental relevance of mindfulness during adolescence—a period marked by heightened emotional sensitivity, identity exploration, and increased importance of peer relationships (Crone & Dahl, 2012; Roeser et al., 2000). Intrapersonal applications such as emotion regulation and self-compassion correspond with adolescents' emerging capacities for self-understanding and self-regulation (Steinberg, 2005). Interpersonal applications—empathy, perspective-taking, compassionate communication, and navigating social anxiety—map onto core social-developmental tasks related to belonging, relationship formation, and prosocial behavior (Brown & Larson, 2009; Roeser et al., 2023). Together, these applications suggest that mindfulness may function not only as a coping strategy but as a developmental tool that supports adolescents in engaging both with themselves and with others in more intentional, reflective, and compassionate ways.

Methodologically, this study advances the field by incorporating a one-month follow-up period, a feature still rare in qualitative mindfulness research with adolescents. Previous qualitative studies have often captured adolescents' experiences immediately post-intervention (e.g., Dariotis et al., 2023; Sibinga et al., 2011) and, in many cases, used qualitative findings primarily to contextualize quantitative outcomes, leaving questions about how adolescents continue to apply mindfulness in their daily lives and make meaning of its ongoing relevance in their own words. The one-month interval provided adolescents an opportunity to continue practicing mindfulness and reflect on how they applied mindfulness insights across everyday contexts (i.e., school, home, and relationships), while remaining close enough to the retreat experience to vividly recall and richly describe their experiences. Our findings indicate that many adolescents not only remembered their mindfulness training but were able to articulate specific instances where they applied these skills to real-world challenges. For example, adolescents reported using mindfulness to manage social anxiety, remain open in conversations, and offer emotional support to peers. These accounts suggest that mindfulness skills taught in immersive retreats may be sustainable beyond the retreat context, at least in the short term, supporting prior findings on the durability of mindfulness practice following retreat experiences (Galla, 2016).

Specific recommendations for practice are not warranted from the present results. However, insofar as mindful awareness, self-compassion, and inter-personal capacities such as empathy, patience, and perspective-taking support both emotional regulation and relational development, mindfulness programs that intentionally nurture these skills—particularly through immersive, socially integrated experiences—may more effectively support adolescent well-being. This perspective aligns with recent calls to more deliberately incorporate inter-personal skill development into mindfulness curricula (Colaianne & Falcone, 2025; Doyle Fosco & Schussler, 2025; Roeser et al., 2023) and suggests meaningful opportunities for program designers to consider how structural features, group processes, and relational contexts shape adolescents' engagement with mindfulness beyond formal practice.

Limitations and Future Directions

This study had several limitations. First, while the one-month follow-up period provided valuable post-retreat insights and applications, it may not fully capture the

longer-term integration and sustainability of mindfulness practices in adolescents' lives. Longer intervals could illuminate whether adolescents continue to draw upon these skills over time, apply them to new developmental challenges, or experience diminished benefits without ongoing support. Second, the relatively small, self-selected sample ($n = 15$), along with a gender imbalance favoring female participants, limits the generalizability of findings to broader adolescent populations. Although exploratory analyses revealed no differences between follow-up completers and non-completers on several key variables (see Participant section), adolescents who opted into follow-up interviews may nevertheless have been especially motivated or engaged with mindfulness, potentially amplifying the positive experiences reported. Third, as with many retrospective qualitative studies, adolescents' accounts may have been shaped by recall bias or social desirability effects in which positive experiences were overreported or difficult ones underreported (Creswell & Poth, 2016). Likewise, researcher positionality may have influenced coding interpretations (e.g., reflexivity and analytic stance; Creswell & Poth, 2016).

Future studies could minimize recall bias and enhance ecological validity by supplementing follow-up interviews with methods such as ecological momentary assessment (EMA) or daily diary approaches (Sapthiang et al., 2019). Also, future research should build on these findings by extending follow-up periods to six months or longer to examine the durability of mindfulness applications over time. Comparative qualitative studies could also deepen our understanding of whether retreat-based mindfulness offers unique developmental benefits compared to classroom-based or briefer interventions, particularly in supporting the development of inter-personal competencies (Galla et al., 2024). Additionally, including more diverse samples across socioeconomic backgrounds, racial identities, and program participation motives would enhance understanding of how different adolescents engage with mindfulness practice, extract meaning from retreat experiences, and apply these insights in their daily lives. Finally, future work could explore how specific components of the retreat experience (e.g., peer support, immersive schedules, reflective group discussions) influence the transferability of mindfulness skills in adolescents' ever-evolving social-emotional lives.

Taken together, this study highlights the promise of immersive mindfulness retreats as a context for adolescents to cultivate both intra-personal and inter-personal skills that support their well-being. By illustrating how mindfulness practices extend beyond the retreat setting into adolescents' daily lives, these findings offer valuable insights into the sustainability and real-world relevance of mindfulness for youth development. As adolescence is a critical developmental juncture for emotional growth and social connection, integrating mindfulness into developmentally aligned, immersive experiences may empower adolescents to navigate life's challenges with greater awareness, compassion, and resilience. Future research should continue to explore how such retreats can complement existing mindfulness programs and support adolescents across diverse contexts and developmental stages.

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Data Availability The datasets generated and/or analyzed during the current study are not available to protect the identities of the participants due to the nature of the sensitive and potentially identifiable data. This study's design and its analysis were not preregistered.

Declarations

Ethical Approval All procedures performed in studies involving human participants 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. All procedures were approved by the University of Pittsburgh Institutional Review Board.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of interest The authors declare no competing interests.

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