

## **Listening to Adolescents' Voices:**

### **Co-Creating, Implementing, and Evaluating a Mindfulness-Based Program for Adolescents**

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Young people around the world are experiencing increasing levels of psychological distress (Marchant & Masiga, 2024). In Europe, nine million adolescents aged 10 to 19 are living with mental health disorders (Cappelaere, 2021). Furthermore, suicide is the second leading cause of death among adolescents between the ages of 15 and 19 in the European Union (OECD/European Union, 2022). Some of the factors contributing to increased distress in youth include the COVID-19 pandemic, the influence of social media, the climate crisis, and lack of access to good mental healthcare (Abrams, 2023; OECD/European Union, 2022; Terry, 2024). These sources of distress lay on top of the intrinsic challenges of adolescence, a stage of life fraught with change and instability (Dahl et al., 2018).

Given the current youth mental health crisis, there are many calls for action. The World Health Organization and the Institute for Health Metrics and Evaluation encourage national policies to provide accessible, evidence-based treatment and preventive interventions for young people (WHO, 2021; Castelpietra et al., 2022). Though many researchers have attempted to develop such programs, there are two key issues: (1) the interventions are not sufficiently tailored to adolescents' needs and preferences (McGorry & Mei, 2018) and (2) the longstanding gap between psychological research and practice leads to infrequent use of evidence-based interventions (Baker et al., 2009).

There is a promising approach that may help address both issues: participatory action research, also known as co-creative research. Co-creative research entails a collaboration between academic researchers, adolescents, and mental healthcare providers in the development of interventions (Leask et al., 2019). This kind of research views adolescents as agents rather than passive recipients in matters that concern them (Carnevale et al., 2021). Co-creative research can help us develop interventions that are tailored to adolescents' needs and preferences, potentially increasing the adherence and effectiveness of said interventions (Leask et al., 2019). The co-creative research approach also includes the mental health professionals who implement the interventions. Involving them in the process contributes to reducing the gap between research and practice in youth mental health care.

The following research proposal presents a project that aims to co-create a preventive mindfulness-based program for adolescents in the general population. We chose mindfulness-based programs because of their transdiagnostic nature, which means they target risk factors common to many disorders, such as rumination and difficulties regulating emotions (Johnson et al., 2016). Though some research has found that mindfulness-based programs are promising for adolescents with mental health diagnoses (Chi et al., 2018; Kostova et al., 2019), findings are less clear for preventive mindfulness-based programs targeted to a general population of adolescents (Kuyken et al., 2022). Existing preventive mindfulness programs have been criticized for not being tailored enough to adolescents' needs and preferences (Kuyken et al., 2022; Lo, 2024; Pérez-Peña, 2024). Therefore, there is a clear need for implementing a co-creative research approach in the field of mindfulness for youth.

The following research proposal will first dive into the scientific literature on mindfulness for adolescents, and then describe the aims and methodology of the research project we are proposing.

## **State of the art**

### **Mindfulness for Adolescents: The State of the Evidence**

From targeting depression in clinical contexts to promoting social-emotional learning in schools, mindfulness-based programs (MBPs) are increasingly being used to meet adolescents' mental health needs (Chi et al., 2018; Lo, 2024). Research on the efficacy and effectiveness of MBPs for teenagers has been steadily rising for the past 20 years (Lo, 2024). Though many studies have shown positive effects of MBPs on a variety of mental health outcomes in adolescents (Chi et al., 2018; Zenner et al., 2014; Zoogman et al., 2015), recent studies have obtained less positive results (D. Dunning et al., 2022; Odgers et al., 2020), notably in the case of school-based MBPs for a general population of adolescents (Fulambarkar et al., 2023; Kuyken et al., 2022).

Recent reviews and meta-analyses have compiled and assessed the highest-quality research studies in the mindfulness for youth literature, namely randomized-controlled trials (RCTs), revealing the following findings. In comparison to active control groups, MBPs significantly improved anxiety symptoms ( $d = 0.11$ ) and mindfulness ( $d = 0.24$ ), but not depression, in clinical and non-clinical samples of youth below the age of 18 (D. Dunning et al., 2022). No significant effects were observed at follow-up. Dunning and colleagues (2022) further highlighted that the study quality of existing RCTs is low and inconclusive. Another meta-analysis focusing on anxiety, found that MBPs significantly improved anxiety symptoms in children but not in adolescents in school or clinic settings (Odgers et al., 2020). Lastly, a meta-analysis focusing on MBPs for adolescents in a school setting, found that in comparison to inactive controls, MBPs significantly reduced stress, but not anxiety and depression (Fulambarkar et al., 2023). Effects on stress were not significant when compared to active controls. Taken together, these findings suggest that MBPs may have temporary positive effects on specific outcomes, namely stress and mindfulness, and not on other outcomes, such as depression, in a population of adolescents. Furthermore, the current evidence is of low quality and highly heterogeneous, so more research is needed to make robust conclusions.

Several researchers have answered the call for conducting higher quality, larger-scale RCTs to test the impact of MBPs on adolescent mental health. Many of these studies have taken place in schools to test the potential preventive effect of MBPs on the mental health of adolescents from the general population. A prime example of this is a methodologically strong, parallel group, cluster-RCT conducted among early adolescents (ages 11-14;  $N = 8376$ ) in 84 schools in the United Kingdom known as the MYRIAD trial. The study's findings revealed that a universal MBP was not superior to normal social-emotional education in terms of risk of depression, social-emotional-behavioral functioning, and well-being (Kuyken et al., 2022). Similarly, a cluster RCT conducted among mid-adolescents (ages 15-18;  $N = 231$ ) in Belgian schools found no effect of an MBP on emotional distress, anhedonia, and related outcomes in comparison to passive controls (Bogaert et al., 2023). Another RCT conducted in Spain among young people between the ages of 13 and 21 ( $N = 300$ ), found significant improvements in social self-concept and interpersonal difficulties and preventive effects on depression and somatic symptoms in older adolescents in comparison to a waitlist control group (Gómez-Odriozola & Calvete, 2021). However, younger adolescents had significantly

higher levels of depression and somatic symptoms after the MBP than adolescents in the control group, suggesting a moderating role of age in an MBP's effects (Gómez-Odrizola & Calvete, 2021). These mixed findings point to the fact that studying MBPs in adolescents is a complex endeavor requiring a highly nuanced approach that asks the questions of “what works, for whom, and how”? (Montero-Marin et al., 2022, p. 117).

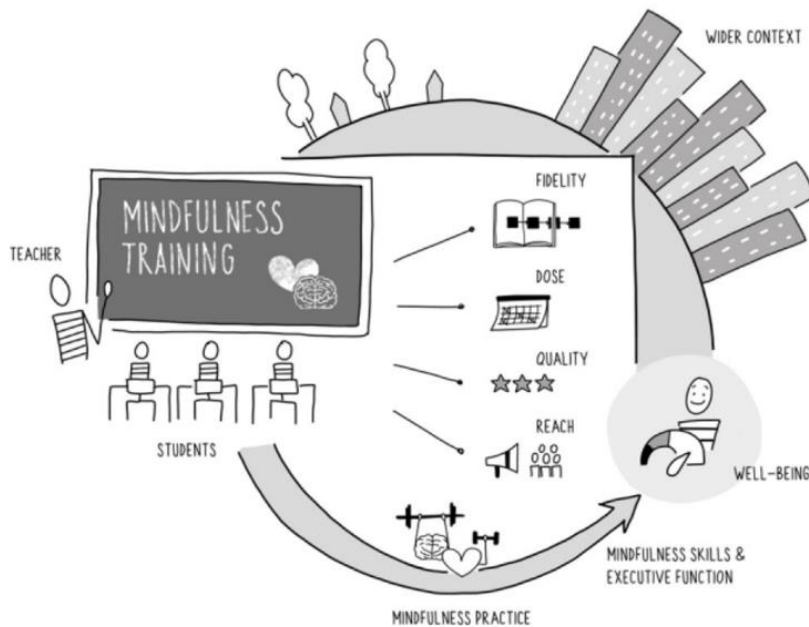
To conclude, the evidence for MBPs' effects on adolescent mental health is currently mixed and inconclusive. Some evidence suggests that MBPs have positive effects on stress and mindfulness, but there is an increasing number of studies finding no effects of MBPs on various mental health outcomes. What could explain these mixed findings?

### One Size Doesn't Fit All

There are several possible explanations for these mixed findings. Many different factors interact to ensure the success (or lack thereof) of an MBP: the adolescents' characteristics (e.g., age, gender, level of well-being, etc.), the mindfulness trainers' characteristics (e.g., embodiment of mindfulness, competence in teaching, level of well-being, etc.), the program being delivered (e.g., the quality, dose, how engaging and adapted it is to the population), how much the adolescents practice at home, and the context of implementation (e.g., school, clinic, etc.; Montero-Marin et al., 2022). See Figure 1 for an illustrated summary of these variables. Recent research has revealed the moderating role of some of these factors. In the discussion below, we focus on age, MBP, and frequency of home practice.

**Figure 1**

*What works, for whom and how conceptual framework for school-based MBPs (copied from Montero-Marin et al., 2022)*



Several studies have shed light on the moderating role of age in MBPs for adolescents. Results from a meta-analysis on school-based MBPs, found that MBPs taught during late adolescence (15-18 years old) had the largest impact on youth mental health and well-being (Carsley et al., 2018). This result was replicated by a meta-analysis of 12 to 25 year-olds with depressive symptoms which found a significant moderating effect of age on MBPs' effects on executive functions (Chi et al., 2018). Increased age was associated with greater benefits. Lastly, Gómez-Odriozola & Calvete (2021) found positive effects of an MBP in older adolescents and deleterious effects in younger adolescents in comparison to a control group. Similarly, the MYRIAD study described above, found iatrogenic effects of a school-based MBP in early adolescents with existing mental health difficulties (Montero-Marin et al., 2022). One possible explanation for these findings is that older adolescents may have sufficiently developed self-reflection capacities and a heightened brain plasticity to benefit from such a training whilst early adolescents may not yet have these abilities (Ahmed et al., 2015; D. L. Dunning et al., 2019). Another potential explanation is that existing programs may not be adequately adapted to younger adolescents and there is a need for age-appropriate programs (Lo, 2024).

Though many efforts have been made to develop age-appropriate programs for adolescents (Broderick, 2013; Deplus & Lahaye, 2015; Tan & Martin, 2013; Vo et al., 2015), current evidence suggests that existing programs may not be engaging enough. In Gómez-Odriozola & Calvete's (2021) study, satisfaction surveys revealed that 14- to 16-year old adolescents would have liked the program to be more dynamic, diverse, and attractive. Some of their suggestions for improvement included: adding more games, having different activities, doing more dynamic activities, including more relaxing music and videos, among others. Another indicator of low engagement in MBPs is the low frequency of home practice reported across studies in adolescents (Bogaert et al., 2023; Kuyken et al., 2022; Pérez-Peña et al., 2024). These findings call for MBPs that are engaging and tailored to adolescents' needs.

### **Mindfulness-Based Programs for Adolescents by Adolescents**

Given the evidence for adolescents' low engagement in MBPs and given the increasing number of findings showing null effects of MBPs on adolescent psychological well-being, the question arises: are the existing programs sufficiently tailored to adolescents' needs? The current state of the evidence suggests that the answer to this question may be no. This does not come as a surprise given that the programs currently used in adolescent populations have for the most part been adapted from programs created for adults facing specific difficulties such as chronic pain (Kabat-Zinn, 2013) and chronic depression (Segal et al., 2018). Furthermore, adapted programs have mainly been created by mental health professionals without active input from adolescents during the conception of the program (e.g., Broderick, 2013; L. Tan & Martin, 2013). We commend prior authors' work in tailoring existing programs to adolescent populations (L. B. G. Tan, 2016), as these programs have helped advance mindfulness research and clinical practice for teenagers. Nonetheless, it may be time to consider another approach to developing MBPs for teens, one that deeply considers their needs, experiences, and perspectives.

Existing developmental literature (Dahl et al., 2018), our research on mindfulness for adolescents (Roux et al., 2021; Pérez-Peña et al., 2024), and our prior experience working with adolescents, have shed light on some of the needs to consider when developing MBPs for teens.

First, given adolescents' increased tendency to seek novelty and excitement as well as their high energy levels (Dahl et al., 2018), there is a need for MBPs for teens to be more dynamic and fun. This could be achieved by including a variety of activities and including more movement-based mindfulness practices (Carsley et al., 2018). Second, there is a need for role models that help inform adolescents' emerging identity (Dahl et al., 2018). MBP instructors have the potential for being positive role models who embody mindfulness and inspire students to practice mindfulness (van Aalderen et al., 2014). Future MBPs need to consider the role of instructors in delivering these programs for teens. A third developmental need is a need for autonomy (Dahl et al., 2018), which calls for programs that give teens a certain level of choice over the practices and activities they do in an MBP. Finally, a fourth core need is a need for social belonging (Tomova et al., 2021). MBPs adapted for adolescence should carefully consider group composition and group dynamics as they may be key ingredients for an MBP's success (Bogaert et al., 2023; Pérez-Peña, 2024). In short, future MBPs for adolescents need to consider adolescents' needs for dynamism, identity development, autonomy, and social belonging.

The above paragraph summarizes our informed views as researchers and psychologists on what adolescents' needs may be. However, to create a program that is engaging and adapted to an adolescent audience, their experiences and perspectives must also be considered. In our opinion, a fruitful way forward in the creation of an adequately tailored and engaging MBP for adolescents, involves a collaborative approach between researchers, psychologists, mindfulness trainers, and teenagers.

## **Our Research Proposal**

### **Questions, Hypotheses, and Objectives**

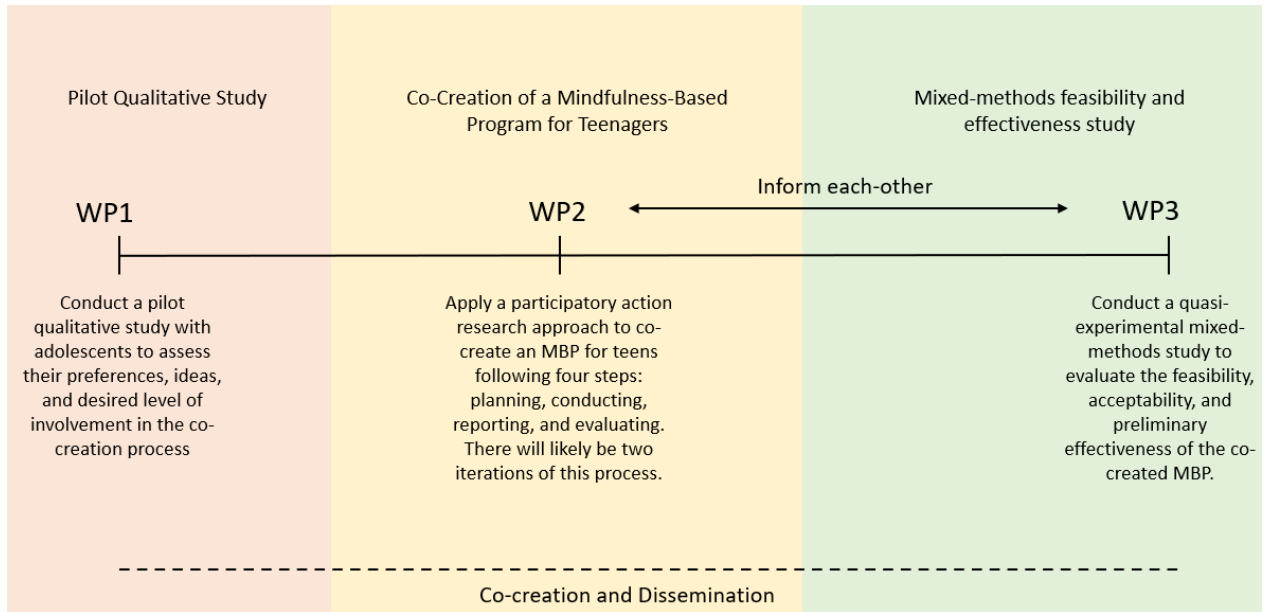
Given the low engagement and null to small effects observed in recent research on MBPs for adolescents, our research question is: is an MBP co-created with adolescents (aged approximately 12-18), researchers, psychologists, and mindfulness trainers more engaging, developmentally appropriate, and effective than existing MBPs? The objectives of the current research are to co-create, implement, and evaluate the efficacy of a co-created, preventive MBP for adolescents from the general population. We hypothesize that a co-created MBP will be significantly more: engaging (as measured by frequency of home practice and adolescent subjective reports), developmentally appropriate (as measured by assessment of the core developmental needs described above), and effective (as measured by key mental health outcome and process variables) than existing MBPs adapted from adult MBPs.

### **Methodology: A Co-Creative Approach**

To address our research question, we will pursue three work packages (WPs): (1) conducting a pilot qualitative study with adolescents to assess their preferences, ideas, and desired level of involvement in the co-creation process, (2) applying a participatory action research approach to co-create an MBP for teens, and (3) conducting a quasi-experimental mixed-methods study to evaluate the feasibility, acceptability, and preliminary effectiveness of the co-created MBP. These WPs are further detailed below, and their temporality is illustrated in Figure 2. We also plan to pre-register all studies to ensure scientific transparency.

**Figure 2**

*An overview of the project*



**WP1: A Pilot Qualitative Study**

The aim of this pilot qualitative study is to actively incorporate adolescents’ perspectives from the outset of the research. Prior to initiating the co-creation process, we plan to conduct three one-hour group sessions with a representative sample of adolescents. During these sessions, we will explore key questions, including: how important and engaging they find the idea of participating in a co-creation process, what factors would motivate them to get involved, how they envision the co-creation process unfolding, and what roles they would prefer to take within it.

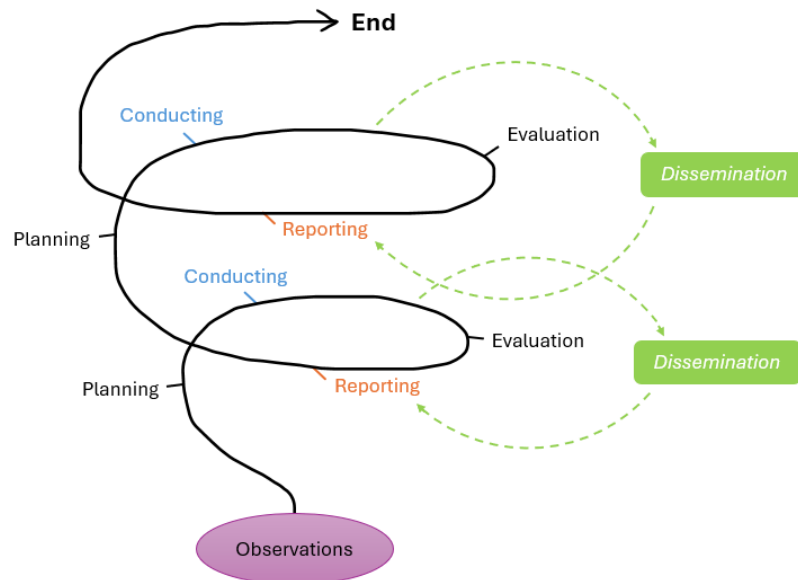
**WP2: Co-Creation of a Mindfulness-Based Program for Teenagers**

We will use a participatory action research approach to co-create an MBP for teens. Many recent studies have used participatory co-creation approaches to develop interventions tailored to adolescents’ needs (Boland et al., 2022; Driessen-Willems et al., 2021; Klein Schaarsberg et al., 2023; Leta et al., 2024; Maenhout et al., 2023; Matheson et al., 2021). Co-creation is defined as a collaboration between academic researchers, end-users (i.e., in this case, adolescents) and stakeholders (e.g., people involved in the implementation of the program) in the development of interventions (Leask et al., 2019). Involving end-users and non-academic stakeholders ensures that programs are adequately tailored to their target audience (Leask et al., 2019).

Throughout our research project, we will co-create an MBP by following the steps outlined in Leask et al. (2019) and summarized in Figure 1 and Table 1. The co-creative process is an iterative approach involving four general steps: planning, conducting, evaluating, and reporting (Leask et al., 2019). Dissemination of the acquired knowledge and know-how is implemented all along this iterative process.

**Figure 3**

*An illustration of the co-creative process as conceived in Leask et al. (2019)*



During the planning stages, the co-creators define the problem, the objectives of the co-creation process, the other co-creators who will be involved, the general design of the co-creation process, and how the success of the co-created program will be assessed during the different rounds of co-creation.

The second iterative phase is the conducting phase. During the first round of co-creation, the conducting phase involves recruiting the co-creators. In our case, this will involve having information sessions with adolescents, their parents, and mental health professionals who implement mindfulness programs with teenagers. Once the co-creator team is established, a series of highly interactive meetings amongst co-creators will be conducted to move towards the general purpose of the project. It is very important that all co-creators actively participate in all aspects of the meetings so that everyone feels a sense of ownership. Subsequent rounds may or may not involve recruitment of new co-creators depending on what is decided by the co-creator team.

The third iterative step involves evaluating the co-creative process and the intervention that has been co-created. All co-creators are invited to reflect and give feedback on the process followed. Based on this feedback, the co-creation process is improved for the following round. The evaluation phase also includes evaluating the co-created intervention. The evaluation methods will be decided upon with input from the co-creators. However, some of the ideas we currently have for evaluating the intervention are described below in WP3.

The fourth iterative step is reporting. This involves reporting back to the scientific community on what was learned and disseminating the findings and intervention to a larger group of adolescents and mental health professionals working with adolescents. Since the co-creative process is an iterative process, the four steps described above will continuously inform each other

and they will repeat in a cyclical fashion as show in Figure 3. A summary of the steps can be found in Table 1.

**Table 1**

*Steps and principles of the co-creation process as outlined in Leask et al. (2019)*

Steps	Principles
1. Planning	<ul style="list-style-type: none"> <li>• Framing the aim of the study using the PRODUCES framework, which involves defining the Problem, Objective, Design, Users, Co-creators, Evaluation, and Scalability.</li> <li>• Sampling: agree on a sampling method for co-creators to ensure a representative sample of end users and stakeholders.</li> </ul>
2. Conducting	<ul style="list-style-type: none"> <li>• State, right, and act of ownership: ensuring that co-creators have an equal standing in the group, and all participate meaningfully.</li> <li>• Defining the procedure: agreeing on the purpose, rules of participation, structure, etc.</li> </ul>
3. Evaluation	<ul style="list-style-type: none"> <li>• Evaluating the co-creation process itself</li> <li>• Evaluating the effectiveness of the co-created intervention</li> </ul>
4. Reporting	<ul style="list-style-type: none"> <li>• Report on the co-creation process using the checklist for reporting intervention co-creation in Leask et al. (2019)</li> </ul>

***WP3: Mixed-Methods Study Evaluating the Co-Created MBP’s Feasibility, Acceptability, and Preliminary Effectiveness***

To evaluate the co-created MBP’s feasibility, acceptability, and effectiveness, a quasi-experimental study will be conducted with adolescents. The study will have a pre-post design in which participants will complete questionnaires and interviews before and after the co-created MBP. Questionnaires will measure participants’ emotional distress symptoms, mindfulness skills, identity development, body awareness, and emotion regulation skills. Qualitative interviews will assess participants’ lived experiences and perceptions of the MBP. General questions will also be asked regarding adolescents’ perceptions of the instructor, awareness of themselves and their values, their felt sense of autonomy during the program, how they felt in the group, and how dynamic they found the program. Lastly, frequency of home practice will also be assessed to gauge engagement to the program. The methodology outlined in WP3 will be adapted in line with the results of WP2, so as to maintain continuity with the co-creation process.

***Dissemination throughout WPs***

To bridge the gap between research and practice, we aim to disseminate the knowledge gained throughout the WPs. This dissemination will occur on two fronts: practical and scientific. Our dissemination efforts will be integrated throughout the co-creation process, ensuring continuous engagement with both co-creators and relevant audiences.

On a practical front, we would like to:

1. Share mindfulness tools and ongoing findings of our project on the Consultations Psychologiques Spécialisées mindfulness website throughout the co-creation process.
2. Offer interventions to professionals delivering MBPs to youth every other month.
3. Have an annual meeting with mindfulness trainers working with youth to provide a space for sharing each other’s research, insights, and perspectives.
4. If the co-created MBP is feasible, acceptable, and effective, workshops can be organized to guide mental health professionals in the implementation of this program with adolescents.

On a scientific front, we would like to:

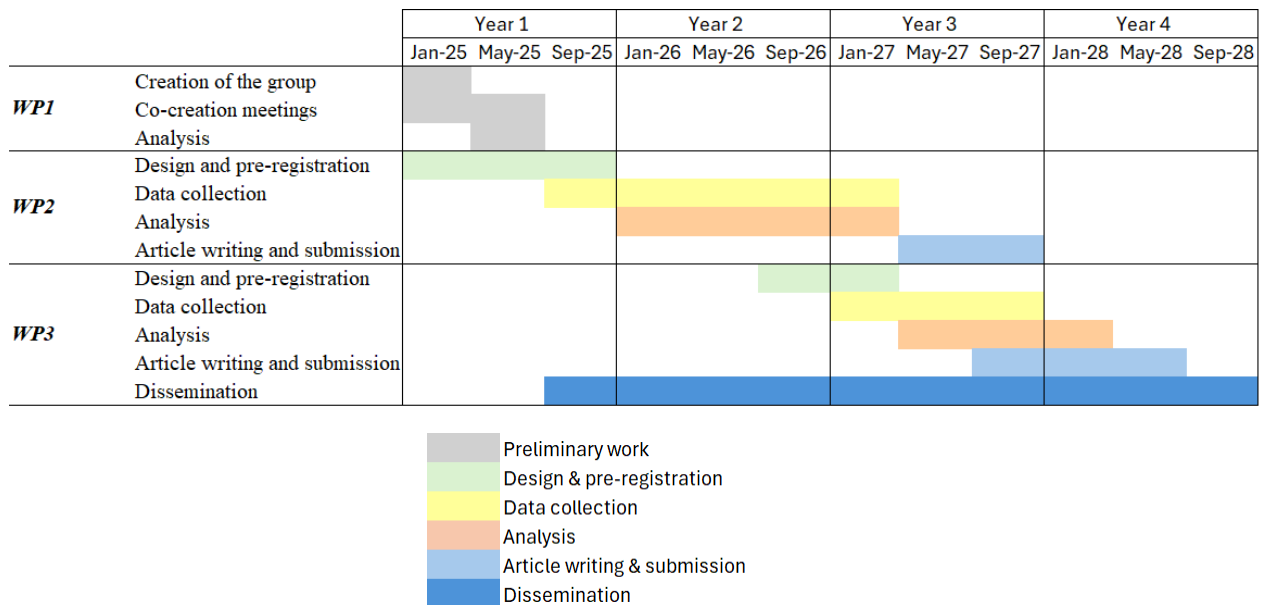
1. Share our work with the larger scientific community by presenting at various symposia and conferences. Doing this throughout the project, will also allow us to receive input from other researchers throughout the process and to share methodology and findings that may be of interest to many researchers and psychologists.
2. Since the present project could provide a reference example for other mindfulness researchers who seek to co-create MBPs for specific populations, we would like to share the methodology and findings of our project via publications in scientific journals.

### Timeline of the Project

Below is a Gantt chart showing the timeline for the 4-year project, which will be conducted on a part-time basis.

**Figure 4**

*Timeline of the project*



## Conclusion

Aware of the current youth mental health crisis, the lack of preventive evidence-based programs adequately tailored to adolescents, and the large gap between psychological research and practice, this proposal presented a project whose aim is to co-create, implement, and evaluate a preventive mindfulness program for adolescents from the general population. The voices of adolescents, mental health professionals, and academic researchers will all be heard in this process. The project's findings will be disseminated throughout the process to mental health professionals and academic researchers, thereby helping to bridge the gap between research and practice. To our knowledge, this is the first research project to co-create an MBP with adolescents for adolescents. The project has implications for research methodology in the field of intervention research for youth, prevention efforts for adolescent mental health, and collaboration efforts between researchers and clinicians.

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