What makes you stay? Trajectories of volunteer-related experiences in an international campaign for the destigmatization of mental disorders

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Abstract

Addressing a gap in the literature of applied psychological research in the field of volunteering, this pre-registered, scientifically independent investigation sheds light on volunteering experiences of psychology students engaging in a Germany-wide spin-off of a pan-European campaign aiming at the destigmatization of mental disorders, *Mind the Mind*, a workshop-based *Social Impact Initiative* in the *European Federation of Psychology Students' Associations* (EFPSA). Accompanying half a campaign cycle, in a 5-wave longitudinal, questionnaire-based cohort study, N = 207 volunteer data points were obtained. Contrary to the hypotheses, displaying their own initially stated motivation as a treatment did not yield effects on volunteer satisfaction, commitment, or intent to remain, and volunteer commitment decreased throughout the mandate. Due to the unsaturated data basis, multiverse reanalyses were undertaken using Bayesian Statistics next to frequentist NHST procedures, indicating anecdotal evidence in favor of positive treatment effects on volunteer commitment. Furthermore, volunteer satisfaction and intent to remain show a moderate degree of fluctuation, but no significant directional trends. Volunteer public speaking anxiety significantly decreased throughout the data collection, while mental health significantly worsened, as indicated by increased PHQ-4 scores. 51.22% of surveyed volunteers exhibited a secure attachment style, and working alliance was evenly distributed between task, bond, and goal orientation with target audiences. Preliminary evidence points towards perceived participant interest and involvement, certain age-groups, and volunteers' overall workshop experiences as predictive of globally rated workshop success. Further analyses establish a nuanced, yet complicated picture of continuance in volunteering, experiences in delivering workshops, and receiving trainings. Against the background of these findings, critical methodological assessment is undertaken, implications for the preservation and improvement of volunteer engagement from an organizational perspective are discussed, next to concerns regarding the sustained need for structural funding and incentivizing of voluntary work on a broader, sociopolitical notion.

Keywords: volunteering, volunteer management, non-profit organizations, activism, attachment, mental health, organizational commitment, public speaking anxiety, working alliance
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Mental disorders pose enormous individual and societal challenges, even more exacerbated during the COVID-19 pandemic (World Health Organization, 2021, 2022a): The proportion of young people with symptoms of depression has more than doubled in several EU countries during the pandemic, and almost 50% of young Europeans report an unmet

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need for mental health care (OECD & European Union, 2022), last not least due to concerns about being treated differently than apparently "healthy" individuals, fear of losing one's job, and worries about other systemic consequences, inter alia shame, ostracism, and marginalization (The Lancet, 2016).

Public (as in negative or discriminatory attitudes about mental disorders by others), self-referential (as in negative attitudes, including internalized shame in people affected), and structural (as in policies of government and private organizations that intentionally or unintentionally limit opportunities for people affected by mental disorders) stigmatization of mental disorders (Corrigan, Druss, & Perlick, 2014; Corrigan & Watson, 2002a) remain widespread (e.g. Yokoya, Maeno, Sakamoto, Goto, & Maeno, 2018), and negatively affect physical health, treatment attitudes, general self-efficacy, self-esteem, and anxiety (Sickel, Seacat, & Nabors, 2019), as well as variables beyond personal well-being, such as anger, group identification, and sense of justice (Corrigan & Watson, 2002b). Consistent with previous research, a recent extensive review by Yanos, DeLuca, Roe, and Lysaker (2020) constitutes that self-stigma, for example, leads to reduced hope, lower self-esteem, worse outcomes in the context of mental health related symptoms, difficulties with social relationships, and more difficulties at work, and Oexle et al. (2018) found self-stigma to be associated with poorer recovery rates after one and two years in a longitudinal study of more than 200 individuals diagnosed with a mental illness. In a report on all three established forms of stigma, Rössler (2016) goes so far as to state, "there is no country, society or culture where people with mental illness have the same societal value as people without mental illness." While medical or genetic explanatory approaches to mental disorders may have become subject to increased public acceptance, generalized negative stigmatization of people affected by mental disorders remains high (Thornicroft et al., 2016), accompanied by stereotypes, prejudices, and experiences of discrimination alike (Corrigan et al., 2014). Consequently, efforts to reduce stigma in the form of anti-stigma interventions to mitigate its potentially harmful effects on the lives of people with (severe) mental illnesses have repeatedly, and more recently, become a central demand of (trans)national policy makers, among others, the German Federal Government, and the World Health Organization (WHO) (SPD, BÜNDNIS90, & FDP, 2021, p. 67; World Health Organization, 2022b).

Therefore, high-quality destigmatization approaches seem particularly important to address and mitigate not just structural and societal, but also internalized mental health stigma-related repressions. A recent meta-analysis by Morgan, Reavley, Ross, Too, and Jorm (2018) suggests contact and education interventions in Anglo-American samples to exhibit small to medium effects in terms of reducing stigmatizing attitudes and social distancing in non-clinical samples. Song, Hugh-Jones, West, Pickavance, and Mir (2023), focusing on non-clinical younger participants aged 10 to 19, point in their systematic review towards small reducing effects of education-based interventions on mental health stigma post-intervention, but not at follow-up appointments. As a recent serve on dealing with clinical groups, Peter et al. (2024) showed continuum-based beliefs on mental health and disorders to aid individuals with moderate depression severity in reducing internalized and anticipated stigma. However, many questions regarding psychological and structural intervention characteristics remain unanswered (Morgan et al., 2018), such as differential intervention effects depending on participants' age, gender, school/education and urban/rural situation, long-term effects, effects of longer (>30min) interventions, behavioral (instead

of intentional) consequences on discriminatory attitudes, exact descriptions of intervention characteristics, methodological precision of previous studies, and the roles of participants' knowledge, fear, and empathy as psychologically mediating process variables.

Albeit these pressing social issues remaining subject to further research for now, far less is known about the individuals *delivering* destigmatization interventions, especially in voluntary work contexts. Merging branches of volunteer research and destigmatization campaign work, the present investigation therefore aims to shed a light on experiences in voluntary campaign work aiming at the destigmatization of mental disorders.

One campaign addressing this mission can be found in "Mind the Mind – To Combat the Stigma of Mental Disorders", a campaign instantiated in 2014 by the *European Federation of Psychology Students' Associations* (EFPSA) as part of their *Social Impact Initiative* (EFPSA, 2021b), a working programme aiming to make use of psychological knowledge to impact society. In addition to social media destigmatization work and establishing cooperations with stakeholders from psychosocial professions, the campaign's core consists of 45 or 90 minute, workshop-based education programmes, aiming to raise awareness on mental disorders, their prevalence, and phenomenology. Workshops are delivered by trained facilitators (so-called *Volunteers*, voluntarily engaged psychology students and psychologists from across Europe), who also provide practical information on possible courses of action in the event of experiencing or observing individuals being affected by mental disorders in one's own social environment, as well as secondary psychoeducational education through critical knowledge transfer about (categorical) diagnostics of mental disorders, symptoms, and their biopsychosocial and etiological correlates. Workshop materials are repeatedly evaluated and adapted every year (so-called *mandate*) by mental health professionals associated with the umbrella organization, and draw on didactic methods like videos, role-play, games, and moderated group discussions. In 2019, just before stopping their activities for one year due to COVID-19, the campaign recorded around 30000 workshop participants reached out to by 1273 volunteers from 24 European countries (ibid.). Although there are internal evaluations of the umbrella organization regarding the experiences of involved status groups in the campaign (coordinators and Volunteers), no systematic, scientifically independent investigation to date has had the chance of drawing on such a broad volunteer population.

In general, a number of variables play a role in volunteering, some rather close to what might be called *personality* (e.g. attachment), others more state-oriented, such as mental health, third again factors related to attitudes and motivation, of which key concepts and findings regarding frameworks, motives and characteristics of volunteers, working alliance and attachment in counseling services, and mental health-related aspects of volunteering are illuminated below.

0.1 Motives and characteristics of volunteers

Volunteering, as a formally recognized concept, has been around for more than 200 years (Dreyfus, 2018; Haski-Leventhal, Meijs, Lockstone-Binney, Holmes, & Oppenheimer, 2018). It can broadly be defined as any activity in which individuals freely allocate time to benefit another cause, group, or person (Wilson, 2000), and has been subject to various definitory variations (see Fernandes & Matos, 2023, for an overview of volunteering definitions in the literature).

Although statistics on volunteer work in destigmatization endeavors are sparse, over-

all, volunteer involvement is and has been widespread: In 2022, globally, almost 15% of the world's population aged 15 years and above (862.4 million individuals) were engaged in voluntary work (United Nations Volunteers (UNV) programme, 2021). For Germany, in 2019, 39.7% of people (around 28.8 million) aged 14 and above volunteered in their leisure time, compared to 40.0% in 2014, exhibiting a non-negligible increase from a 30.9% proportion of volunteers in 1999, for the first time not showing statistically significant gender differences (though still operationalized via binary gender classification) in 2019 (Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, 2021).

From a sociological view (Marwell & Oliver, 1993), volunteering as a form of civic engagement, and (social) activism need not be examined separately. At the same time, the role of social change as a possible lay theorists' facet inherent to activism (as opposed to amelioration of individual struggles for voluntary work, Wilson, 2000) cannot be denied: Caputo (1997) found the extent to which female volunteers perceive their work to *make a difference*, and being engaged in organizations that reflect an affinity for activism, to explain higher likelihoods of volunteers to also become activists, the latter term understood as comprising activities set out "to change social conditions". Simultaneously, on the notion of Eliasoph (1998; as cited in Wilson, 2000), both role labels as a *volunteer* and as an *activist* alike can be understood in terms of their social constructivist nature, directing the focus of attention towards commonalities in motives, individual characteristics, alignment to rational action, cost-benefit analyses, and social resources (Wilson, 2000), and are last not least subject to individual self-designation. However, there is evidence that "activism" can lead to different outcomes than volunteering: For example, for neighborhood-focused activism (as compared to volunteering), Gilster (2012) found stronger associations with neighborhood and personal mastery, contact with local officials, and social ties in the neighborhood. Still, both conventional political, and activist-protest forms of volunteering seem united in that they offer means to strengthen inclusion, participation, accountability, and may stimulate change of policies, while relying on individuals' commitments, values, solidarity, and often altruistic motives (Mati, Wu, Edwards, Taraboulsi, & Smith, 2016; Neely, Lengnick-Hall, & Evans, 2022).

On the intersection of social change and amelioration of individual disturbances, to put it with Eliasoph's (1998, p. 12) words, civic engagement in general, and voluntary work specifically, is aligneable with the desire to "care about people". Although it is to note that the postscript of this quote goes along the somewhat apathically legible lines of "…, not about politics", on a broader societal notion, one could cite Kahlert (2005), who recalls the exclamation of the women's movement of the 1970s, stating that the private sphere is political, too. Though Hannah Arendt was perhaps more intentional about opposing the common good to private interests (Arendt, 1970, p. 172), for the sake of the current argument, it seems evident that an amelioration of mental health-related stigma would yield consequences on both individual and political levels of analysis.

Two contemporarily predominant tracks of theorizing about motivations related to voluntary work involve functionalist and self-determination aspects. This seems especially relevant as, even if volunteering is conceptualizable as an altruistic act of aid without expectations of reciprocity (Wilson & Musick, 1999), volunteering has proven to entail beneficial psychological, social, and physical effects on volunteers themselves (Wilson, 2000), last not least increases in life satisfaction, self-esteem, and reduced likelihood of engaging in problem

behaviors (Haski-Leventhal et al., 2018; Mateiu-Vescan, Ionescu, & Opre, 2021).

Clary et al.'s (1998) *functionalist* approach proposes six key motivational functions that guide why people volunteer: (1) Values, in that volunteering alows individuals to express deeply held values related to altruism and helping other-orientation; (2) understanding, referring to learning new skills, gaining knowledge, or exploring new experiences; (3) social aspects, meaning volunteering to help individuals strengthen their social relationships or fit into social groups; (4) career-related aspects, in that volunteering poses a chance of enhancing individual career prospects by providing job-related skills, networking opportunities, and experience; (5) protective functions, targeting ways volunteering protects volunteers' ego or reduces negative feelings like guilt or personal distress; (6) enhancement functions, meaning a contribution to volunteers' personal growth, development, and sense of self-worth.

Fernandes & de Matos' (2023) *engagement and self-determination* approach draws on Deci and Ryan's self-determination theory (SDT) (Deci & Ryan, 1980, 2000), proposing eight key facets that guide peoples' volunteering motivations: (1) Value congruence, comprising the extent to which volunteers identify with and perceive the volunteering organization as an integral part of their self-concept, (2) perceived autonomy and (3) relatedness, understandable as feelings of volitiond and connectedness with other volunteers (4) perceived competence, referring to a sense of effectiveness while engaging in voluntary work, (5) volunteer engagement, conceptualizable as the vigor, dedication and absorption during task performance (6) intention to recommend, (7) develop new offerings, (8) and loyalty to the volunteering organization, based on attitudinal and behavioral components.

Inherent in both of these theoretical strands is a strong focus on values, with Fernandes and Matos (2023) for the first time empirically demonstrating value congruence as internal mediating mechanism in volunteer engagement processes. Groundbreaking volunteer theorizing and research has underpinned volunteering to serve personal and social functions (Allison, Okun, & Dutridge, 2002; Clary & Snyder, 1999). Newer research underpins, i.e. that student volunteering in higher education is driven by diverse, evolving motives, not solely by the desire to enhance CVs or "do good" for the community (Holdsworth, 2010), as also emphasized by the manifold motivational facets and theory frameworks that have unfolded through decades of volunteer research.

Core outcome variables in volunteer research have crystallized in volunteer commitment, intent to remain, and satisfaction. These factors have been shown to be influenced by a combination of engagement, ethical leadership, intrinsic need satisfaction, effective volunteer management, and the fulfillment of volunteer motivations. Understanding these variables can help non-profit organizations develop strategies to enhance volunteer experiences and retention.

On this notion, Vecina, Chacón, Sueiro, and Barrón (2012) found volunteer engagement to portray a critical factor in shaping volunteer satisfaction, especially in new volunteers. For veteran volunteers, engagement has been shown to strengthen organizational commitment, which in turn predicts the intent to continue volunteering (ibid.). Herein, Boezeman and Ellemers (2009) demonstrated satisfaction of relatedness needs to be a core predictor of volunteer job satisfaction, consistent with the finding that participation efficacy and group integration predict satisfaction, and also intent to remain (Galindo-Kuhn & Guzley, 2001). Further key contributors to volunteer satisfaction are found in the nature of the work, and appreciation (Jiménez, Fuertes, & Abad, 2009), pointing towards the role

of organizational volunteer management in retaining volunteers.

Taking a cursory look at volunteer management, ethical leadership has proven itself to positively influence volunteer satisfaction, affective organizational commitment, and the intention to stay, wherein satisfaction takes on a mediating role the relationship between ethical leadership and both outcomes (Benevene et al., 2018). Cho, Wong, and Chiu (2020) found effective volunteer management practices, including reward and recognition, empowerment, schedule flexibility, orientation and training, and social interaction, to positively influence volunteers' intention to continue, wherein job satisfaction fully mediated this relationship. Volunteer satisfaction has also successfully been predicted by emotional reactions such as sympathy or distress, and the fulfillment of motivations (Davis, Hall, & Meyer, 2003), pointing towards a possible importance of taking into account realistic job and organizational preview (cf. Breaugh & Billings, 1988). Specifically, training, preparation, and management of expectations have the potential to build positive benefits for both organizations and volunteers, as investigated in an extensive qualitative study by Haski-Leventhal et al. (2020). A recent meta-analysis by Zhou and Kodama Muscente (2023) demonstrated values of volunteers to be the strongest predictor of volunteer satisfaction, commitment, and intention to continue alike.

A possible consequence of these findings on factors positively influencing volunteer retainment, numerous challenges can occur that produce volunteer dropouts, i.e. discrepancies between anticipated and actual tasks (Yanay & Yanay, 2008), tensions between self-determination needs and boundedness to organizational frameworks (i.e. conflictuous team atmospheres or inefficient management and organization) (H.-L. Chen et al., 2020; Fernandes & Matos, 2023; Konieczny, 2018), or the extent and quality of organizational socialization and prosociality (Livi et al., 2020). This poses the question of different stakeholders' (Haski-Leventhal et al., 2020) perceptions on their collaboration and volunteer management, as well as organizations' commitment to addressing these challenges in strengthening volunteer motivations and motives, volunteer-related outcomes in general, and retainment specifically. On a promising note, addressing these factors can have long-lasting impacts (Tse, 2020): Feeling respected as a volunteer, for example, is able to explain a higher likelihood of continuing to volunteer up to 20 years later, is, across the same timespan, associated with higher levels of volunteer well-being, and with higher (lower) levels of daily positive (negative) affect.

As for individual characteristics of volunteers, numerous findings can be taken into consideration: In general, volunteers are likely to be female and younger compared to non-volunteers (Cemalcilar, 2009; Vorobieva & Skipor, 2021), tend to exhibit higher levels of self-esteem, self-concept, and civic attitues (i.e. social responsibility and community belonging) (Cemalcilar, 2009), as well as resilience, risk-taking, involvement, sociability, poise, and openness (Shutenko, Shutenko, & Lokteva, 2023), show a pronounced degree of sensitivity and prosocial orientation (Hobfoll, 1980), and are found to have higher levels in Big Five traits such as openness, extraversion, agreeableness, conscientiousness, and emotional stability, compared to non-volunteers (Akhtar, 2019). Comparing voluntary work helping people versus animals, there is some evidence pointing towards higher levels of altruistic orientations in individuals engaging in volunteering with animals (Vorobieva & Skipor, 2021). Perhaps interestingly, higher GPAs in college students predicted a higher likelihood of indicating the intent to volunteer at some point in the future, with locally,

personally, or nationally renowned non-profit organizations receiving greater willingness to volunteer (Shields, 2009).

0.2 Attachment and working alliance in psychotherapy, counseling, and voluntary work

As there is more conceptual and empirical work on personal factors relating to alliance-building capacities in psychotherapy research than volunteer studies, using psychotherapy (PT) research, concepts borrowed for the present investigation will be exemplified using PT research to illustrate their relevance for volunteering.

In psychotherapy research, the role of therapists' attachment style in shaping a *working alliance* with individuals in treatment has received increased attention throughout the last decades. Herein, working alliance (WA, also referred to as alliance) draws on Bordin's (1979) initially psychodynamic, but ultimately pantheoretical concept, interweaving the relationship between the analyst and the patient's rational ego, and the understanding of a therapeutic contract, with the concept of the "real relationship", i.e. the non-transference relationship between patient and analyst, entailing qualities of the clinician's genuine, caring, and understanding attitude.

The concept of WA is proposed to contain three facets, namely task, goal, and bond orientation (Bordin, 1979). Specifically, task orientation refers to a bilateral agreement on treatment tasks, including a treatment contract. Goal orientation refers to the agreement on treatment goals, even if the formulation of the concept implies a certain degree of specificity and explication, since this agreement can also be reached implicitly, i.e. with a high degree of treatment experience and alliance on the part of the therapists.

It is with cursory note that Bordin proposes different characteristics of agreement on the goals of treatment, depending on therapists' respective school of psychotherapy: Whereas in psychodynamic psychotherapy, a frequent agreement is constituted in an understanding of patients' stress, frustration, and satisfaction to constitute a function of patients' own thoughts, feelings, and actions, entailing a possibly delayed understanding throughout the course of treatment, in (cognitive) behavioral therapy, a frequent agreement is found in a focus on more specific and explicated goals in terms of behavior, cognitions, emotions and values, entailing a possibly early, conscious understanding. However, as for volunteering, there are no specific "schools" that are identifiable, but rather various types of organizations that people volunteer for, with welfare and community, sport and recreation, and education and training being the three dominant ones (Gray, Khoo, & Reimondos, 2012). A consistent working hypothesis is therefore that different types of task-related agreements may become relevant depending on the context of volunteering and the target groups.

Finally, bond refers to a general question on whether the patient trusts the therapist sufficiently with regard to the latter expertise to be helpful, including differentiations along type I (experiencing the therapist as supportive and helpful from a receiving perspective; more pronounced at the beginning of therapy, and trait-like), and type II bonds (experiencing a "we" feeling with regard to joint efforts in adressing patient struggles; more likely to occur in later treatment phases). Bordin emphasizes a "generalizability" of the working alliance construct, in the sense of a meaningfulness of the alliance not being limited to psychoanalysis. According to Bordin, working alliance serves as a core component of change processes. However: Aspects of alliance unfold depending on the type of treatment aimed at

change. Thus, by definition, there is no "alliance-effective" reaction of the therapist, since the alliance arises in the dyadic interaction, and is a phenomenon that occurs as a result of the interaction between therapist and patient.

A meta-analysis by Bernecker, Levy, and Ellison (2014) suggests therapists' attachment avoidance and anxiety negatively impact working alliance, implying therapists should address their own attachment style to foster better patient outcomes. Satterfield and Lydodon (1998) constitute secure attachment to be significantly associated with improved working alliance goals and global ratings, while fearful attachment negatively impacts bonds and global ratings in counselling clients. On this notion, lower attachment anxiety in counselors has been shown to be associated with better working alliances, and improved counseling competence (Bernecker et al., 2014; Dinger, Jennissen, & Rek, 2019). From patients' perspectives, secure attachment to therapists has exhibited positive correlations with working alliance, while avoidant attachment negatively influences working alliance (Mallinckrodt & Jeong, 2015). In addition, client comfort with intimacy and secure attachment can moderate the relationship between counselor experience and working alliance, further enhancing the therapeutic relationship (Kivlighan, Patton, & Foote, 1998). On the notion of a more intersubjective, interactionalist view, Bucci, Seymour-Hyde, Harris, and Berry (2016) found therapists' insecure attachment to negatively affect the therapeutic alliance in more symptomatic clients, highlighting the importance of both client and therapist attachment styles in the therapeutic process.

Why the excursus into psychotherapy research, a reader may ask? Because, at the same time, there is little evidence regarding influences of attachment styles on working alliance in volunteer work. For the present considerations, predominantly drawing on Dinger et al. (2019), volunteer counselors in telephone emergency services seem to experience a decrease in attachment anxiety during training, in turn predicting better working alliances and general skillfulness with callers. Investigating interpersonal characteristics of counselor trainees for a Germany-wide telephone counseling service against a non-clinical reference group, Rek and Dinger (2016) moreover demonstrated higher interpersonal values for harmony and helpful influence scales, and established three clusters of trainees, namely those with predominantly submissive-altruistic, helpful-influential, and friendly-harmonious working orientations. While life satisfaction did not differ between these three clusters, friendly-harmonious trainees exhibited higher extraversion and agreeableness than submissive-altruistic and helpful-influential individuals. At the same time, helpful-influential trainees scored significantly lower in agreeableness than those with a more submissive-altruistic style, and friendly-harmonious trainees exhibited lower scores in neuroticism than trainees from the two other clusters. Attachment-related anxiety and avoidance were lower in the friendly-harmonious than in the other two clusters, with individuals in this cluster additionally showing a higher self-rated general capacity to mentalize, in contrast to trainees in the submissive-altruistic cluster.

This raises the question of which properties of alliance-building capacities volunteers in destigmatization work may bring along to their roles, with a postscript specific to the present investigation, namely the fact that workshop target audiences adressed by volunteers surveyed in the present study are constituted of participant groups including teenagers and (young) adults in non-clinical contexts, and without known diagnoses of mental disorders.

0.3 Mental health and volunteering

A cursory look at PubMed's literature data base suggests a strong growth of the literary corpus regarding volunteering and mental health: In 2024 alone, 253 publications under the global keywords *(volunteering AND (mental health))* have already been published. There is robust evidence of associations between volunteering and improved mental well-being, including lower levels of depression, and higher life satisfaction and well-being (Jenkinson et al., 2013; Musick & Wilson, 2003; Tabassum, Mohan, & Smith, 2016; Thoits & Hewitt, 2001).

Asking the "what works for whom" question, there is insufficient evidence to demonstrate a consistent influence of specific volunteering types or intensities on mental health outcomes (Jenkinson et al., 2013). However, while short-term volunteering does not reliably lead to immediate changes in psychosocial health measures, long-term volunteering has been associated with better mental health outcomes (Jiang et al., 2021; Musick & Wilson, 2003). This is to be contextualized against newer evidence demonstrating voluntary work having seemingly shifted from a long-term to a more episodic and noncommittal nature (Traeger, Haski-Leventhal, & Alfes, 2022). Some evidence also points towards volunteering for religious cases perhaps being more beneficial for mental health than secular volunteering, this result being confined to elderly individuals above age 65 (Musick & Wilson, 2003). On the notion of age differences, particularly adults after age 40 and throughout old age benefit significantly from volunteering, not least due to increased social integration and strengthening of psychological resources (Jiang et al., 2021; Lum & Lightfoot, 2005; Musick & Wilson, 2003; Tabassum et al., 2016). In contrast, albeit mentioning social capital, sense of purpose, effecting change, and self- as well as collective care as decisive resources in their engagement, 60% (31%, and 19%) of university student activists stated multiple, qualitatively surveyed adverse (positive, and no) effects of activism on their psychological well-being (Conner, Crawford, & Galioto, 2023).

Another facet specific to the volunteer work investigated in this study, is public speaking, as the administration and facilitation of workshops is an integral part of volunteers' campaign activity. Again, there is more conceptual and empirical work on public speaking experiences in students in general than student volunteer studies. However, as the presently surveyed volunteers consist of psychology students, it is noteworthy that, in higher education students, public speaking anxiety (PSA) poses one of the most widely faced anxieties, shown in the Czech Republic, Finland, the UK, and the US (the latter sample including 61% of participants reporting fear of public speaking) (Lintner & Belovecová, 2024). This exemplification draws attention to specific extents of public speaking anxiety in presently surveyed campaign volunteers, especially against the background of participation in training courses to prepare for workshop facilitation is a mandatory part of the volunteer training before delivering workshops for the first time.

Also relevant to the present context, volunteers in mental health services report increased social-community involvement and non-stigmatizing companionship for individuals with psychiatric illnesses (Hallett, Klug, Lauber, & Priebe, 2012). With this in mind, Yeung, Zhang, and Kim (2018) demonstrated that volunteering, particularly volunteering directed towards others, is associable with better health outcomes, particularly for social subgroups such as older people, ethnic minorities, and individuals with lower highest levels of education

than the totality of statistically standardized general adults, somewhat pointing towards cumulative beneficial effects of self- and other-oriented voluntary work.

Attempting a synthesis from the vast corpus of volunteer research illuminated so far, to narrow down on the present investigation, it can be highlighted that specific forms of volunteering do not necessarily comprise comparability. Specifically, Overgaard (2019) propose a critical rethinking of volunteering, explicating and problematizing different assumptions that might drive an audible societal call for increased volunteering, namely:

> "[T]he tendency to perceive 'volunteering' as one form of activity, not many forms; the lack of clarity about whether volunteering is work or leisure; the preposition that unpaid formalized work is similar to informal work; the argument that choice is a defining part of volunteering; the assumption that individuals make a choice between volunteering or not rather than a choice between paid and unpaid work; and a lack of critical perspectives on the fact that volunteering is an arrangement that pushes people to work without getting paid for it."

Against this contextualization, for an attempt to remedy the ongoing need for research in voluntary destigmatization work with considerations of economy for data collection, whilst taking into account the voluntary nature of the survey participation that arose in addition to the actual ecological volunteer tasks in the presently accompanied campaign, a reduced selection of volunteer-related factors from the realms of motives and characteristics, personality, and state-orientation (i.e. mental health, public speaking anxiety) was undertaken.

1 Overview of the present investigation

In this study, we investigated seven research tracks with their respective hypotheses, surveying a German sample of psychology students volunteering for the Europe-wide campaign "Mind the Mind" (EFPSA, 2021b):

(RQ1) What are trends in volunteer satisfaction, volunteer commitment, and intent to remain across multiple waves of data collection throughout a volunteer mandate? EH1 | Volunteer commitment remains stable or increases over time, and commitment trajectories show individual differences. EH2 | Volunteer satisfaction remains stable or increases over time, and satisfaction trajectories show individual differences. EH3 | Volunteer intent to remain remains stable or increases over time, and intent to remain trajectories show individual differences.

(RQ2) How can volunteer commitment, satisfaction, and intent to remain be strengthened? H1 | Volunteer satisfaction varies as a function of grappling with one's own initial motivations to volunteer such that the relationship will be positive upon re-reading one's own initially stated motivation. H2 | Volunteer commitment varies as a function of grappling with one's own initial motivations to volunteer such that the relationship will be positive upon re-reading one's own initially stated motivation. H3 | Volunteer intent to remain varies as a function of grappling with one's own initial motivations to volunteer such that the relationship will be positive upon re-reading one's own initially stated motivation.

(RQ3) What are motivational correlates peculiar to the present sample? Specifically: EH5 | Does initial volunteer commitment predict changes in volunteer intent to remain?

(RQ4) What are trends in presentation anxiety throughout the mandate progressing?

EH4 | Volunteer presentation anxiety remains stable or decreases over time, and presentation anxiety trajectories show individual differences. EH6 | Is there a relationship between presentation anxiety and number of workshops delivered by a volunteer?

(RQ5) Are there associations of volunteers' attachment style with motivational facets and experienced working alliance? EH7 | Is volunteer attachment style associated with facets of motivation to initialize volunteering? EH8 | Does volunteer attachment style predict differences in perceived working alliance with workshop target audiences?

(RQ6) What trends are there in volunteer mental health throughout the mandate? EH9 | What does the trajectory of mental health in volunteers look like during a campaign?

(RQ7) What are volunteer experiences in delivering workshops for the campaign, including the rating of success and compliance of workshop participants? EH10 | How do volunteer perceptions of experiences in delivering workshops (i.e. overall experience, observer ratings on participants' interest, prior knowledge, involvement, and workshop success) differ depending on target age-group, volunteers' level of experience, and the level of volunteer commitment?

2 Methods

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study. The present study earned Open Materials, Preregistration and Open Data badges for transparent practices. Deviations from the preregistration are made transparent at their appropriate points in the manuscript. Materials, data, R-code, and online supplements are available at: https://osf.io/m2hd4/?view_only=abddff7becd0451ba01346c28a4cee41. Preregistration can be accessed via: https://osf.io/hj6bc.

We used *R* (Version 4.4.1, R Core Team, 2024) within the desktop interface *RStudio* (Version 2024.9.0.375, Posit Team, 2024), and *JASP* (Version 0.19.0, JASP Team, 2024) for all our analyses. Specifically, JASP (ibid.) was employed to calculate reliability and validity, as well as model-fit indices for factor-analytical procedures regarding instruments used to measure constructs; R (R Core Team, 2024) was used for data pre-processing, inferential statistics, and occasional factor-analytical and reliability calculations. The R-package *papaja* (version 0.1.0.9997, Aust & Barth, 2023) was used for manuscript layout. Outcome variables in inferential statistics were z-standardized on their grand mean to obtain standardized coefficients (Snijders & Bosker, 2012, p. 53).

2.1 Statistical power

Sample size calculation for mixed models with multiple random effects is quite complex and depends on various unknown parameters (Brysbaert & Stevens, 2018; Judd, Westfall, & Kenny, 2017; Kumle, Võ, & Draschkow, 2021; Matuschek, Kliegl, Vasishth, Baayen, & Bates, 2017). A preregistered, estimated sample size of N = 300 would ensure sufficient statistical power ($1 - \beta > .95$) to detect medium-sized effects at d = .3 according to Cohen (1988), under various assumptions regarding the different variance portioning coefficients possible in the models (see https://jakewestfall.shinyapps.io/two_factor_power/).

The study was powered to detect effects in the aforementioned magnitude with regard to the main effect of re-reading one's own motivation on intent to remain, volunteer

commitment, and volunteer satisfaction. Effect size of interested is, based on the literature, specified as $\frac{2}{3}$rd of d = .44, the upper limit of effect sizes reported in the meta-analysis by Zhou and Kodama Muscente (2023), predicting volunteer satisfaction, commitment, and intent to continue.

A case where the present design does not provide sufficient power occurs, in addition to a lack of database saturation, when the predicted effect of re-reading one's own motivation substantially varies across participants, since we only realized one stimulus per participant (own initial motivation), following a yoked-design with the display of one's own motivation as within-between-factor (see below, 2.3 Procedure and design). However, we do not expect this to be the case, and if it is the case, we will be able to detect this in our analyses.

For multiverse-reference, an approximative a priori NHST power analysis was conducted using *G*Power* (Version 3.1.9.7, Faul, Erdfelder, Lang, & Buchner, 2007) to determine the minimum sample size required to test the core study hypotheses (H1 to H3). Results indicated the required sample size to achieve 90% power for detecting a medium effect, at a significance criterion of $\alpha = .05$, is N = 89 for linear multiple regression (deviation from zero) with one predictor (`condition`) Thus, the obtained sample sizes of $N_{T2} = 41$, $N_{T3} = 39$, $N_{T4} = 29$, $N_{T5} = 27$ are inadequate to test the core study hypotheses with sufficient power. Post-hoc sensitivity analyses indicated critical effect sizes of d = .67 (.70, .97, 1.04), given the obtained sample size, a significance criterion of $\alpha = .05$, and a desired power of $1 - \beta > .95$ for N_{T2} (N_{T3}, N_{T4}, N_{T5}, respectively).

2.2 Participants

Across all five data collection waves, a total of N = 207 data points were obtained from a longitudinally variable corpus of between 27 (wave 5) and 71 (wave 1) psychology students between 19 and 31 years ($M = 23.15$, $SD = 2.32$, $Median = 23.00$; $female = 189$) from 16 German cities. Ethics approval was obtained before recruiting participants (see below, 6 Ethics statement).

38.03% (N = 27) of T1-surveyed volunteers report having been involved in the Mind the Mind campaign at one point during the previous five mandates (2018-2023) before, out of which 100% had previously assumed the role of volunteer. N = 9 participants had, at one point, assumed the role as local coordinator (N = 1 as national coordinator). Of the 27 people who had already volunteered in the past, 33.33% (N = 9) stated that the frequency of their activities was 1-2 times a month, followed by 25.93% (less than once/month), 22.22% (3-4 times/month), 11.11% (once/week), and 7.41% (more than once/week).

For an overview of the data collection, see table 1. For an overview of the sample gender composition, see table 2. For an overview of the sample age composition, see table 3. For an overview of the sample site composition, see table 4, respectively.

Table 1
Overview of the data collection waves and overall number of participants

Collection				
Wave	Start	End	Reminders	N
1.00	21.02.24	15.03.24	1.00	71.00
2.00	21.03.24	01.04.24	1.00	41.00
3.00	21.04.24	08.05.24	3.00	39.00
4.00	27.05.24	13.06.24	3.00	29.00
5.00	24.06.24	07.07.24	2.00	27.00

Note. Reminders: Number of auto-generated batch-reminders via anonymized participant data base, sent to remind participants of their possibility to fill out the current survey, only sent if completion status was still pending at the time of sending.

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Table 2
Overview of the sample composition by gender throughout the data collection waves

		Gender						
Wave	N	cis-female	cis-male	trans	gender-variant/non-conforming	prefer not to say	other	NA
1.00	71.00	65.00	2.00	0.00	3.00	0.00	1.00	0.00
2.00	41.00	38.00	0.00	0.00	3.00	0.00	0.00	0.00
3.00	39.00	36.00	0.00	0.00	2.00	0.00	0.00	1.00
4.00	29.00	26.00	0.00	0.00	2.00	0.00	0.00	1.00
5.00	27.00	24.00	0.00	0.00	2.00	0.00	0.00	1.00

Note. 1 person chose 'other' as gender categorization during data collection wave 1; the participant specified to identify as 'agender' in the corresponding survey text-box.

Table 3
Overview of the sample composition by age throughout the data collection waves

	Age							
Wave	M	Median	min	max	SD	1st Qu.	3rd Qu.	N
1.00	22.80	23.00	19.00	31.00	2.32	21.00	24.00	71.00
2.00	23.22	23.00	20.00	31.00	2.26	22.00	24.00	41.00
3.00	23.46	23.00	20.00	31.00	2.29	22.00	24.00	39.00
4.00	23.29	23.00	20.00	31.00	2.46	21.75	24.00	29.00
5.00	23.42	23.00	20.00	31.00	2.34	22.25	24.00	27.00

Table 4
Overview of the number of participants by site throughout the data collection waves

wave	1	2	3	4	5
Bamberg	1.00	1.00	1.00	0.00	0.00
Berlin	0.00	0.00	0.00	0.00	0.00
Bonn	1.00	0.00	0.00	0.00	0.00
Cologne	7.00	5.00	5.00	4.00	4.00
Darmstadt	0.00	0.00	0.00	0.00	0.00
Erlangen	3.00	1.00	1.00	1.00	1.00
Duesseldorf	1.00	0.00	0.00	0.00	0.00
Gießen	1.00	1.00	0.00	0.00	0.00
Heidelberg	9.00	7.00	5.00	4.00	2.00
Kiel	10.00	6.00	7.00	5.00	4.00
Landau	2.00	1.00	1.00	0.00	0.00
Leipzig	4.00	2.00	1.00	0.00	1.00
Magdeburg	0.00	0.00	0.00	0.00	0.00
Mainz	6.00	3.00	4.00	3.00	3.00
Mannheim	0.00	0.00	0.00	0.00	0.00
Marburg	1.00	1.00	1.00	0.00	1.00
Munich	0.00	0.00	0.00	0.00	0.00
Muenster	7.00	4.00	4.00	2.00	3.00
Saarbruecken	8.00	4.00	3.00	4.00	4.00
Siegen	6.00	2.00	2.00	2.00	0.00
Trier	0.00	0.00	0.00	0.00	0.00
Ulm	0.00	0.00	0.00	0.00	0.00
Wuerzburg	4.00	3.00	3.00	3.00	3.00

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2.3 Procedure & design

Egligible volunteers were screened as part of the regular volunteer recruiting procedure of the campaign in November 2023. Therefore, all participants presented with study information and informed consent for the present investigation had already been asked during their volunteer initiation phase whether they wanted to be, in principle, contacted for participating in the planned scientific cohort study. They had also been informed that their decision to consent would not affect their status as a volunteer, and that their participation in the present investigation remained on a voluntary basis, opt-out being possible at any time during the data collection. Generating a random participant id according to a data-collection independent participant data base to ensure anonymity and GDPR-conformity, enrolled participants were batch-invited every four weeks from February to June 2024 (T1 to T4) to participate in the surveys for the present, scientifically independent research project. At T1, enrolled volunteers were also stimulated by their local coordinators at the instated sites of the campaign in Germany to participate in the first survey of the research project. Still, participants were, at every time of data collection, self-selected, and did not receive any monetary or ideational compensation for the participation.

During T2 to T5, in addition to the measures described below, participants were assigned via simple randomization to either a control (no display) or intervention (display of own motivation) group, yielding `condition` to constitute a within-between factor, with the number of treatments (number of times having re-read one's own motivation at the end of the data collection) received per participant ranging from 0 to 4, and two between-participant groups at each wave T2 to T5.

The surveys were administered in English language, albeit collected in a sample in Germany, due to three reasons: Firstly, because the native language of some volunteers is not German. Secondly, because the working community of the umbrella organization is active throughout Europe and thus the comparability of possible future data collections beyond Germany should be strengthened. Thirdly, because the administration of our test batteries was carried out using instruments constructed and validated mainly in English, so that the comparability of the instruments should be guaranteed even if individual item wordings are adapted to the present sample.

2.4 Measures

For an overview of all variables, scales, and items sorted by each wave, including estimated survey durations, see the survey and codebook in OSF: https://osf.io/9txjy/?view_only=abddff7becd0451ba01346c28a4cee41.

Due to the unsaturated data basis, no valid arguments can be given in favor of or against measurement invariance for repeatedly employed questionnaires in the present study. Invariance is formally defined as "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute" (Horn & Mcardle, 1992) and implies psychometric equivalence of a construct measured with the same instrument in different groups, i.e. points in time (F. F. Chen, 2008; Davidov, Meuleman, Cieciuch, Schmidt, & Billiet, 2014; Horn & Mcardle, 1992).

Deviating from the pre-registration, no measurement invariance testing was applied as a consequence. Against the background of reliability and model-fit testing procedures,

however, we assume measurement invariance of the instruments used. Specifically, this assumption concerns the following questionnaires: Volunteer Functions Inventory (VFI) (Clary et al., 1998), Volunteer Engagement and Self-Determination Scale (VESD) (Fernandes & Matos, 2023), Organizational Commitment Questionnaire (OCQ) (adapted to the present sample from Mowday, Steers, & Porter, 1979), Job Satisfaction Scale (JSS) (Cho et al., 2020), Patient-Health Questionnaire (PHQ-4) (Kroenke, Spitzer, Williams, & Lowe, 2009), Public Speaking Anxiety Scale (PSAS) (Bartholomay & Houlihan, 2016), Working Alliance Inventory – Short Revised – Therapist (WAI-SRT) (Hatcher & Gillaspy, 2006; see also Hatcher, Lindqvist, & Falkenström, 2020).

For reliability estimates, item statistics, and (if applicable) factorial model solutions of all literature-based instruments at their respective point of employment throughout the data collection, consider the online supplement: https://osf.io/bdyaf/?view_only=abddff7becd0451ba01346c28a4cee41.

2.4.1 Motivation. *Volunteer motivation* was measured with two questionnaires at T1 and T5, each: (1) Volunteer Functions Inventory (VFI) (Clary et al., 1998), and (2) Volunteer Engagement and Self-Determination Scale (VESD) (Fernandes & Matos, 2023).

The VFI is a 30-item self-report questionnaire, asking participants to rate the importance of possible reasons for volunteering in doing their volunteer work on 7-point scales ranging from 1 (not at all important/accurate) to 7 (extremely important/accurate). The items load on six factors, *Values* (item example: "I am genuinely concerned about the particular group I am serving."), *Understanding* (item example: "I can learn more about the cause for which I am working."), *Social* (item example: "My friends volunteer."), *Career* (item example: "Volunteering can help me to get my foot in the door at a place where I would like to work."), *Protective* (item example: "Doing volunteer work relieves me of some of the guilt over being more fortunate than others."), and *Enhancement* (item example: "Volunteering makes me feel better about myself"). In the present study, Cronbach's alpha was $\alpha = .87$ (.93) for the overall questionnaire at T1 (T5), indicating excellent internal consistency. See figure 1 for volunteers' motivation as measured by the VFI throughout the data collection.

The VESD consists of 25 items, asking participants to rate their agreement on statements regarding their volunteer work with respect to the non-profit organization they are volunteering in on 7-point scales ranging from 1 (totally disagree) to 7 (totally agree). VESD items load on seven factors, *Value Congruence* (adapted item example: "The Mind the Mind campaign reflects who I am."), *Perceived Autonomy* (adapted item example: "I feel like I can be myself while working as a volunteer at the Mind the Mind campaign"), *Perceived Competence* (adapted item example: "I am good at the things I do at the Mind the Mind campaign."), *Perceived Relatedness* (adapted item example: "In the Mind the Mind campaign, I feel myself as part of a group."), *Volunteer Engagement* (adapted item example: "While performing my volunteer activities, I feel full of energy."), *Intention to Recommend* (adapted item example: "I encourage my friends and relatives to be a part of this Mind the Mind campaign."), *Develop New Offerings* (adapted item example: "I provide suggestions for improving the performance of the Mind the Mind campaign."), and *Loyalty* (adapted item example: "I intend to remain loyal to the Mind the Mind campaign in the future"). In the present study, Cronbach's alpha was $\alpha = .86$ (.97) for the overall questionnaire at T1 (T5), indicating excellent internal consistency. See figure 2 for volunteers' motivation

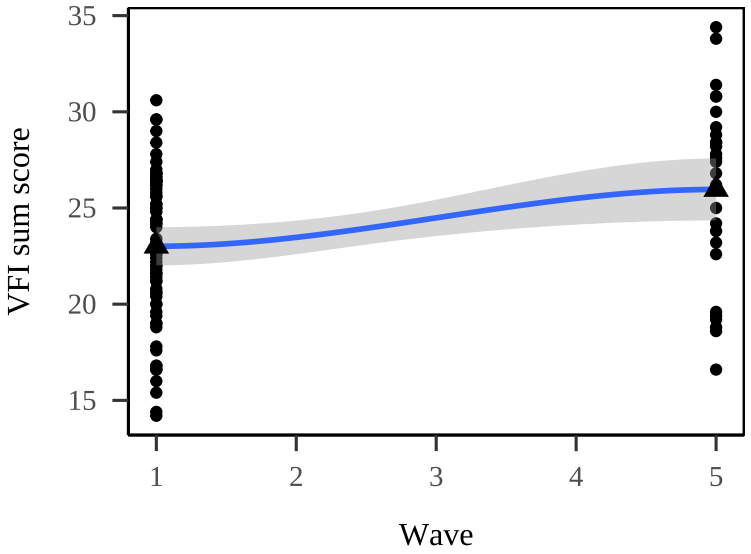

Figure 1. Volunteer motivaton as measured by the VFI in waves 1 and 5.

as measured by the VESD throughout the data collection.

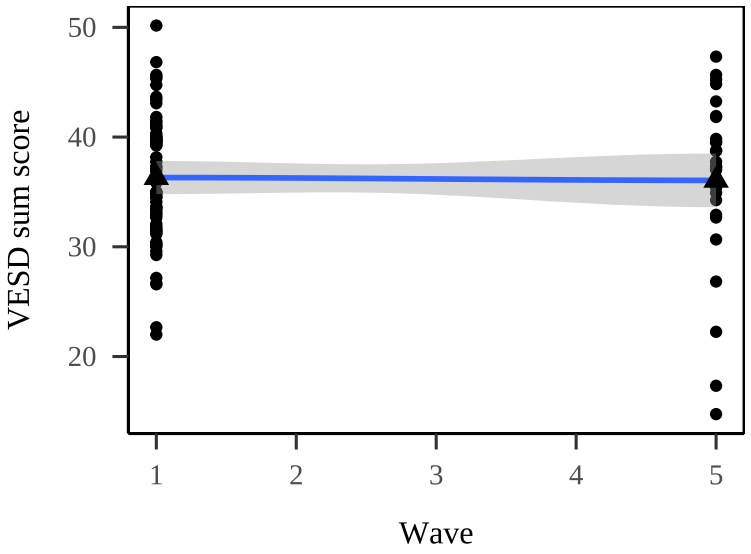

Figure 2. Volunteer motivaton as measured by the VESD in waves 1 and 5.

2.4.2 Satisfaction. *Volunteer satisfaction* was measured in twofold ways: Firstly, with the 9-item *Volunteer Job Satisfaction Scale* (VJS) (Cho et al., 2020), as adapted from Macdonald and Maclntyre (1997) at T1, T2, T3, and T5, asking respondents to indicate their agreement on a scale from 1 (strongly disagree) to 7 (strongly agree) (item example: "I receive recognition for voluntary work well done."). The lack of T4 data for the VJS is explained by a deviation from an earlier version of the pre-registration, which had originally planned 9 data collection waves for the present study, continuing in an A-B-

A-B measurement plan from wave 3 onwards. For the current investigation, the posterior mean reliability estimate for the VJS was $\alpha = .80$ (.79, .83, .91) at T1 (T2, T3, T5), 95% Credible Interval (CI) [0.73, 0.86] at T1 (CI_{T2} [0.71, 0.87], CI_{T3} [0.75, 0.91], CI_{T5} [0.87, 0.95]), indicating strong internal consistency.

Secondly, volunteer satisfaction was assessed using a one-item slider at T2 to T5 to measure *overall volunteer satisfaction* (item wording: "What is your current overall satisfaction with your role as volunteer?"), asking respondents to rate their entries from 0 (extremely dissatisfied) to 100 (extremely satisfied), following the approach by Cho et al. (2020). See figure 3 for volunteers' overall satisfaction as measured by the one-item measure, and figure 4 for volunteers' job satisfaction as measured by the VJS throughout the data collection.

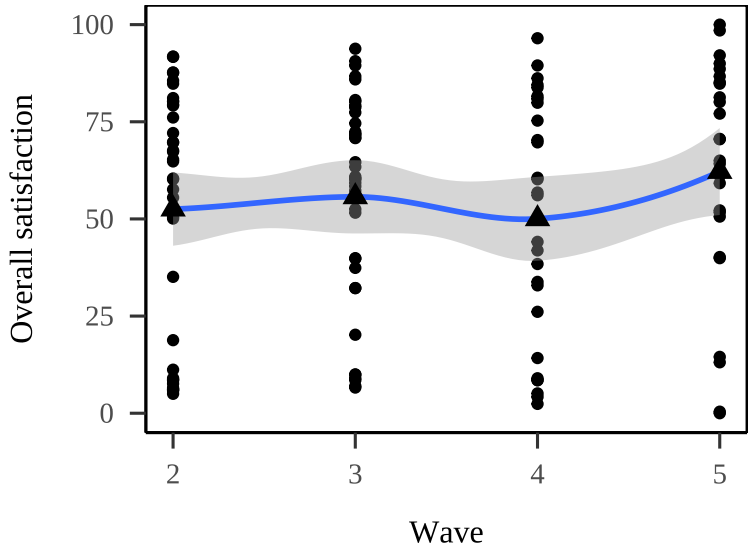

Figure 3. Volunteer overall satisfaction throughout the data collection.

2.4.3 Commitment. *Volunteer commitment* was assessed at T1 to T5 with an adapted version of the *Organizational Commitment Questionnaire* (OCQ) (Mowday et al., 1979). The OCQ is a 15-item measure, asking respondents to indicate their agreement on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) (item example: "The Mind the Mind campaign really inspires the very best in me in the way of volunteer performance."). For the current investigation, the posterior mean reliability estimate for the OCQ was $\alpha = .86$ (.88, .86, .93, .93) at T1 (T2, T3, T4, T5), 95% Credible Interval (CI) [0.82, 0.91] (CI_{T2} [0.83, 0.93], CI_{T3} [0.82, 0.93], CI_{T4} [0.90, 0.97], CI_{T5} [0.89, 0.96]), indicating excellent internal consistency. See figure 5 for volunteers' organizational commitment as measured by the OCQ throughout the data collection.

2.4.4 Intent to remain. *Volunteer intent to remain* was measured at T1 to T5 using a one-item slider from the *Volunteer Satisfaction Index* (VSI) (Galindo-Kuhn & Guzley, 2001), asking respondents to indicate on a scale from 0 (extremely unlikely) to 100 (extremely likely) their position regarding the following statement: "Unless unforeseen changes occur in your life, do you see yourself volunteering in the Mind the Mind campaign one year from now?" See figure 6 for volunteers' intent to remain throughout the data collection.

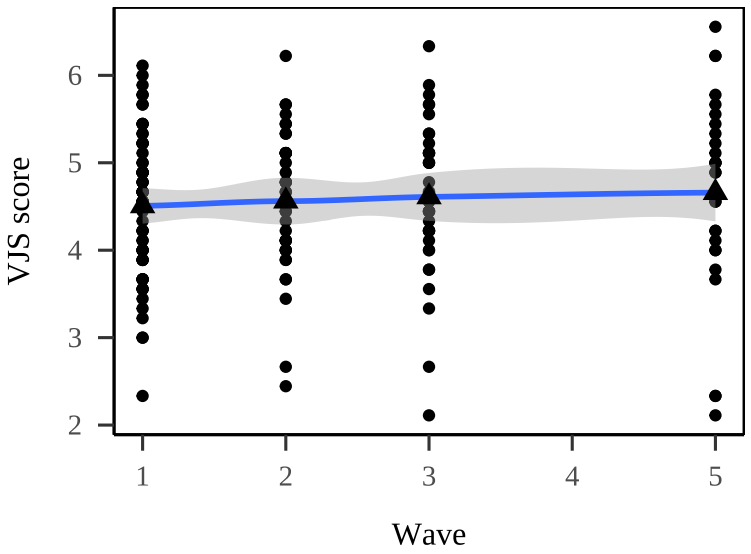

Figure 4. Volunteer job satisfaction throughout the data collection.

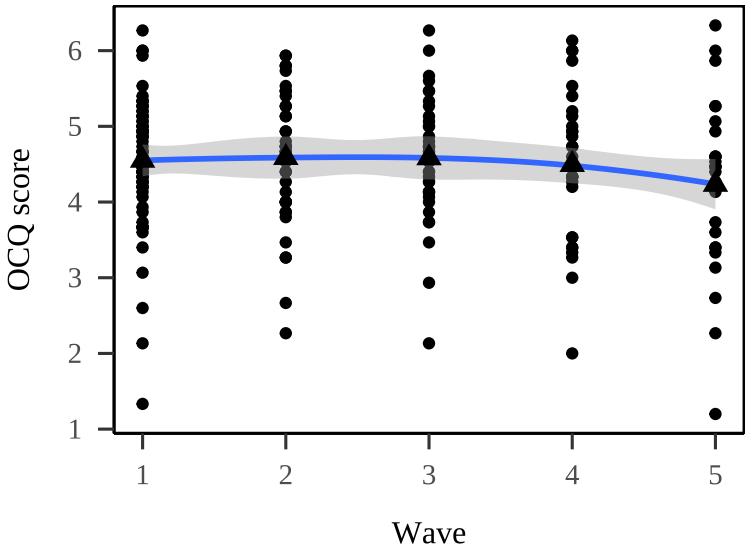

Figure 5. Volunteer organizational commitment throughout the data collection.

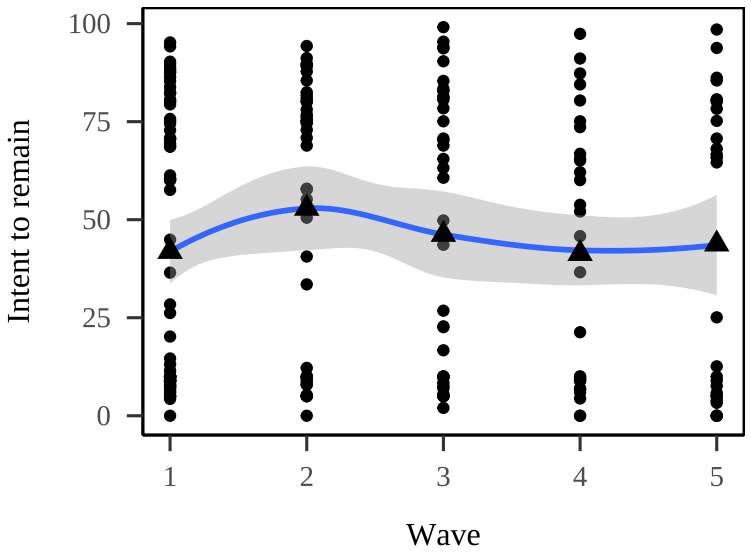

Figure 6. Volunteer intent to remain throughout the data collection.

2.4.5 Attachment. *Adult attachment style* was measured at T2 using the second part of the *Relationships Questionnaire* (RQ2) (Bartholomew & Horowitz, 1991). The RQ has four measurable categories of attachment styles: *Secure*, *fearful*, *preoccupied*, and *dismissing*. The RQ is a single-item measure, consisting of four short paragraphs, each describing a prototypical attachment pattern as it applies to close relationships in adulthood. There are two parts, RQ1 and RQ2; for the present investigation, RQ2 was used to measure attachment in more detail by participant ratings of agreement with the prototypical attachment patterns on a 7-point scale, including semantic differentials for 1 (disagree strongly), 4 (neutral/mixed), and 7 (agree strongly). Classification to one of the attachment styles is obtained by the hightest of the four rankings. Participants were also categorized on (1) anxiety and (2) avoidance dimensions as proposed by Graetz, Woeste, Mrowietz, and Ehrenthal (2021), (1) subtracting the secure plus dismissing items from the fearful plus preoccupied items, and (2) subtracting the secure plus preoccupied items from the fearful plus dismissing items. See table 5 for summary statistics, and table 6 for the distribution of adult attachment styles (categorical), or table 7 for the distribution of adult attachment dimensions (continuous) in the current sample.

Table 5
Distribution of adult attachment styles, mean and standard deviation of RQ2 scores.

Style	Mean	Median	SD	Min	Max	1st	3rd	N
Secure	4.41	5.00	1.56	1.00	7.00	4.00	6.00	41.00
Fearful	3.61	3.00	1.88	1.00	7.00	2.00	5.00	41.00
Preoccupied	2.93	3.00	1.56	1.00	7.00	2.00	4.00	41.00
Dismissing	2.93	3.00	1.56	1.00	7.00	2.00	4.00	41.00

Note. RQ2: Relationship Questionnaire.

Table 6
Prevalence of attachment styles in the sample.

Style	N	Percent
secure	21.00	51.22
fearful	16.00	39.02
preoccupied	2.00	4.88
dismissing	2.00	4.88

Note. Percentages reflect the proportion of individuals in each attachment style category.

Table 7
Distribution of attachment-related anxiety and avoidance, mean and standard deviation of RQ2 indices.

Dimension	Mean	Median	SD	Min	Max	1st	3rd	N
Anxiety	-0.98	-1.00	3.62	-10.00	7.00	-3.00	1.00	41.00
Avoidance	-0.12	-1.00	5.42	-11.00	12.00	-4.00	4.00	41.00

Note. RQ2: Relationship Questionnaire.

Adult attachment in romantic relationships was assessed at T2 using a short, 8-item German version of the *Experiences in Close Relationships – Revised* (ECR-RD8) (Ehrenthal et al., 2021) self-report questionnaire, asking participants to rate their agreement on 7-point scales ranging from 1 (strongly disagree) to 7 (strongly agree). As in the original, 36-item *Experiences in Close Relationships* (ECR-R) (Fraley, Waller, & Brennan, 2000) questionnaire, the 8 ECR-RD8 items load on two factors, *attachment anxiety*, referring to fear of abandonment and rejection (item example: "I often worry that my partner will not want to stay with me."), and *attachment avoidance*, referring to discomfort with intimacy and interpersonal closeness (item example: "It's easy for me to be affectionate with my partner.") (see also Dinger et al., 2019; Ehrenthal, Dinger, Lamla, Funken, & Schauenburg, 2009). For the present investigation, the ECR-R items found in the ECR-RD8 were used in their English form. In the present study, Cronbach's alpha was $\alpha = .78$ for the anxiety subscale, and $\alpha = .72$ for the avoidance subscale, indicating good internal consistency. See table 8 for anxiety and avoidance distributions in the present sample.

2.4.6 Working alliance. An adapted version of the 10-item *Working Alliance Inventory – Short Revised – Therapist* (WAI-SRT) (Hatcher & Gillaspy, 2006; see also Hatcher et al., 2020), originally developed by Adam O. Horvath (http://wai.profhorvath.com/) and grounded in Bordin's (1979) psychodynamic model of the therapeutic working alliance, was employed to assess *working alliance* from the volunteers' perspective at T2

Table 8
Distribution of attachment-related anxiety and avoidance, mean and standard deviation of ECR-RD8 scores.

Facet	Mean	Median	SD	Min	Max	1st	3rd	N
Anxiety	2.76	2.50	1.23	1.00	4.75	1.75	3.75	41.00
Avoidance	2.73	2.75	1.15	1.00	5.25	1.75	3.50	41.00

Note. ECR-RD8: Short version of the Experiences in Close Relationships-Revised questionnaire.

and T5. Volunteers were asked to indicate on a scale including 1 (seldom), 2 (sometimes), 3 (fairly often), 4 (very often), and 5 (always) the extent to which they experience congruence in the agreement on tasks (adapted item example: "The participants and I agree about the steps to be taken to continue the workshop."), goals (item example: "We are working towards mutually agreed upon goals."), and their perceived bond (adapted item example: "I appreciate the participants as persons.") with the participants during campaign workshops. Cronbach's alpha in the current investigation was $\alpha = .73$ (.80) at T2 (T5) for the overall questionnaire, with an $\alpha_{T2} = .50$ (.38, .63), $\alpha_{T5} = .54$ (.51, .74) for the tasks (bond, goals) subscales, respectively. See figures 7, 8, and 9 for volunteers' task, bond, and goal orientations.

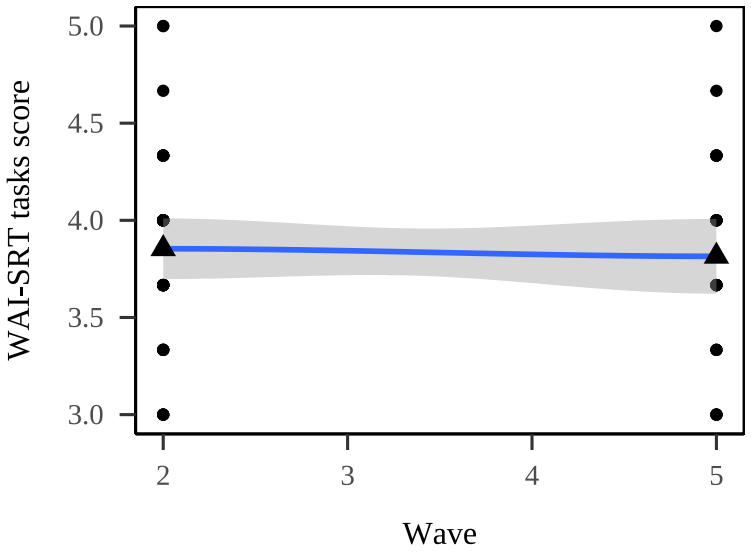

Figure 7. WAI-SRT tasks orientation in volunteers.

2.4.7 Mental health. *Volunteer mental health* was screened using the 4-item *Patient-Health Questionnaire* (PHQ-4) (Kroenke et al., 2009) at T2 to T5. The PHQ-4 is an ultra brief screening instrument for depressive and anxiety symptoms, combining two items from the PHQ-9 (Kroenke, Spitzer, & Williams, 2001) and the GAD-7 (Spitzer, Kroenke, Williams, & Löwe, 2006), just recently demonstrating good reliability in the German general population (Wicke, Krakau, Löwe, Beutel, & Brähler, 2022). For the present

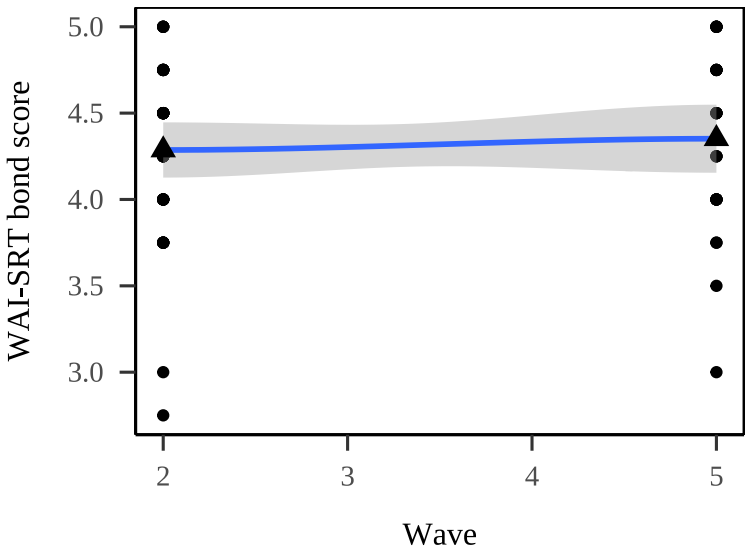

Figure 8. WAI-SRT bond orientation in volunteers.

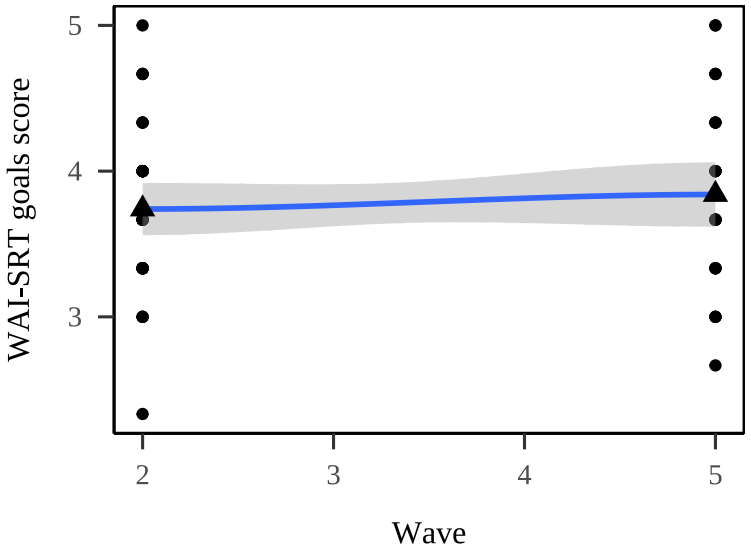

Figure 9. WAI-SRT goals orientation in volunteers.

investigation, the posterior mean reliability estimate for the overall questionnaire was α = .86 (.90, .85, .90) at T2 (T3, T4, T5), 95% Credible Interval (CI) [0.78, 0.92] (CI_{T3} [0.84, 0.95], CI_{T4} [0.76, 0.93], CI_{T5} [0.84, 0.95]), respectively, indicating excellent internal consistency. See figure 10 for volunteers' mental health screening results throughout the data collection.

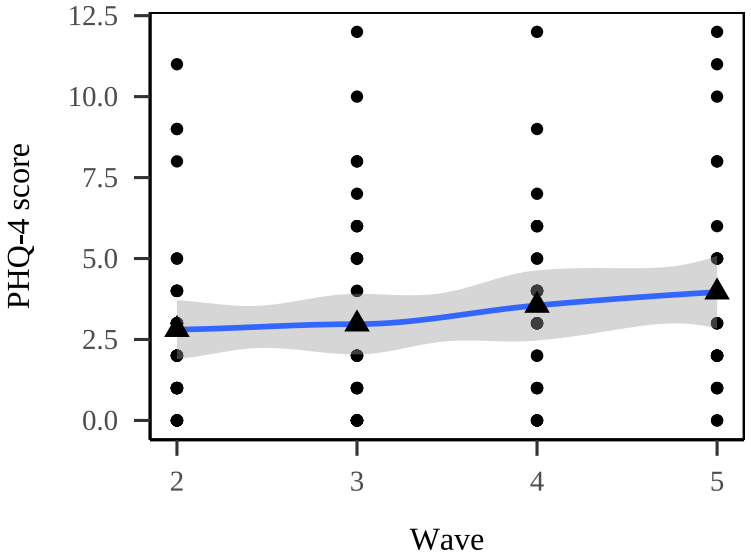

Figure 10. Volunteer mental health screening results throughout the data collection.

2.4.8 Public-speaking anxiety. *Volunteers' public speaking anxiety* was assessed via the 17-item *Public Speaking Anxiety Scale* (PSAS) (Bartholomay & Houlihan, 2016) at T1, T3, and T5. Participants indicated on a 7-point likert scale ranging from 1 (not at all) to 7 (extremely) their perceived extent of PSA symptoms on a cognitive, behavioral, and physiological level. For the present investigation, the posterior mean reliability estimate for the overall questionnaire was α = .92 (.91, .92) at T1 (T3, T5), 95% Credible Interval (CI) [0.89, 0.94] (CI_{T3} [0.88, 0.95], CI_{T5} [0.88, 0.96]). See figure 11 for volunteers' public speaking anxiety throughout the data collection.

2.4.9 Previous volunteering experiences. Previous experiences in volunteering for the Mind the Mind campaign were assessed using items constructed by the author at T2.

Firstly, a single-choice indication of whether volunteers had ever participated in the campaign before, including 0 (no) and 1 (yes).

Secondly, a multiple-choice indication of the previous mandates in which the volunteers had been engaged in the campaign, if applicable, including 1 (9th wave [2022-2023]), 2 (8th wave [2021-2022]), 3 (7th wave [2020-2021]), 4 (6th wave [2019-2020]), 5 (5th wave [2018-2019]), 6 (other/previous).

Thirdly, a multiple-choice indication of the roles volunteers had assumed during their previous volunteer engagements, if applicable, including the options of "Volunteer", "Local Coordinator", and "National Coordinator".

Finally, a single-choice indication of the frequency with which volunteers had been active during their previous volunteer activities, if applicable, including 1 (more than

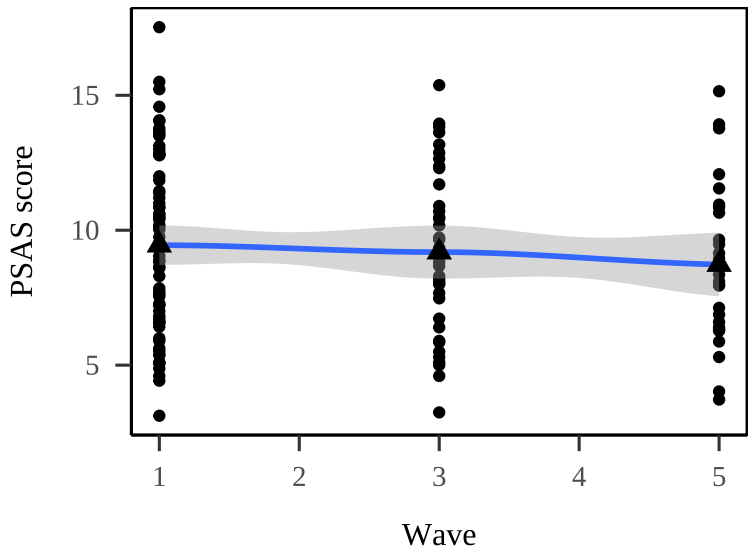

Figure 11. Volunteer public speaking anxiety throughout the data collection.

once/week), 2 (once per week), 3 (3-4 times/month), 4 (1-2 times/month), 5 (less than once/month).

2.4.10 Workshop experiences. Volunteers' experiences of delivered workshops were assessed using items constructed by the author at T2, T4, and T5. The number of delivered workshops by participating volunteers was (T2) 50, (T4) 52 (an increment of 2 workshops), (T5) 78 (an increment of 26 workshops from T4). Table 9 displays descriptive summaries of volunteer-rated workshop experiences. Table 10 displays the number of incidents during which other individuals than workshop participants and facilitators were present during a workshop.

Firstly, single-choice indications whether volunteers had, at the time of data collection, already delivered workshops during their current mandate, including 0 (no) and 1 (yes).

Secondly, numerical indications on a one-item slider ranging from 1 to 50 on the number of workshops they had delivered at the point of data collection.

Thirdly, numerical indications on three sliders, each ranging from 1 to 50, on the number of workshops delivered in different age groups, including "primary school participants (aged to 14)", "high school participants (aged 15 to 18)", and "adults (aged 18 and above)".

Fourthly, workshop ratings were assessed with 5-item questionnaires (item example: "Based on feedback given by participants, how would you rate the success of workshops?"), each question employing a numerical slider ranging from 0 to 100, with different semantic endpoints depending on the question, in the given item example including 0 (not successful at all), and 100 (very successful).

Finally, a multiple-choice indication on, if applicable, other attendees (than participants) present in the room during the workshops, including "Teacher", "(School) Psychologist", "Social Worker", "Neither", "Other [please specify]".

Table 9
Volunteer-rated workshop experiences throughout the data collection.

wave	Question	M	SD	Min	Max	Q1	Q3	N
2.00	Based on feedback given by participants, how would you rate the success of workshops?	76.38	12.39	52.00	92.00	67.25	86.00	16
4.00		77.56	9.78	60.00	90.00	71.25	85.00	16
5.00		78.43	13.19	50.00	100.00	69.50	86.00	23
2.00	Based on feedback you got and on your own observations, how would you rate the interest of participants in the topic of the workshop?	76.06	13.25	57.00	93.00	63.25	87.25	16
4.00		73.38	12.46	54.00	97.00	63.75	84.25	16
5.00		77.74	13.77	45.00	98.00	71.00	86.50	23
2.00	Based on how active participants were during the workshops, how would you rate involvement of participants in activities of the workshop?	65.06	15.10	37.00	87.00	55.50	74.50	16
4.00		64.81	15.63	26.00	85.00	58.00	75.50	16
5.00		70.30	17.14	30.00	100.00	61.50	80.00	23
2.00	Based on the results of 'The short quiz' game and insights shared during the workshop, how would you rate the average level of understanding of participants about topics of mental disorders and stigma before the workshop?	58.12	22.43	19.00	95.00	43.75	67.25	16
4.00		53.44	19.46	16.00	95.00	43.75	65.50	16
5.00		57.52	15.62	35.00	90.00	45.00	67.50	23
2.00	How would you describe your overall experience in delivering workshops?	86.62	10.70	70.00	100.00	79.75	96.00	16
4.00		78.06	16.45	37.00	100.00	71.50	90.25	16
5.00		84.61	13.57	59.00	100.00	77.50	97.00	23

Note. Observer ratings undertaken by volunteers. Higher numbers indicate higher perceived extents of the respective variable.

Table 10
Number of attendees that were not workshop participants and facilitators.

	Wave		
Attendee type	2	4	5
Social worker	1	NA	1
None	16	16	22

Note. Selectable categories of attendees were: Teacher, (School) Psychologist, Social Worker, Neither, Other.

2.4.11 Training experiences. Volunteers' experiences of received trainings to qualify for delivering workshops were assessed using items constructed by the author at T2, T4, and T5. Table 11 shows the number of volunteers having participated in trainings to

prepare for workshop facilitation, and table 12 displays descriptive summaries of volunteers' training experiences.

Firstly, single-choice evaluations of whether volunteers had participated in a training at the point of data collection ("None", "1st part of the training", "Both parts of the training").

Secondly, training evaluations were assessed with 11-item questionnaires (item example: "How well prepared do you feel to deliver Mind the Mind workshops after attending the training for volunteers?"), each question employing a numerical slider ranging from 0 to 100, with different semantic endpoints depending on the question, in the given item example including 0 (not at all prepared), and 100 (very prepared).

Table 11
Volunteer training status by wave

	Wave		
Training status	2	4	5
None	16	11	11
1st part of the training	1	1	0
Both parts of the training	24	17	16

Table 12
Volunteer training experiences throughout the data collection

wave	Question	M	SD	Min	Max	Q1	Q3	N
2.00	How likely is it that you would recommend volunteering in the Mind the Mind campaign to a fellow psychology student?	77.12	20.61	5.00	100.00	70.00	90.00	25
4.00		71.28	25.89	9.00	100.00	62.25	96.00	18
5.00		72.81	28.86	1.00	100.00	61.25	100.00	16
2.00	How organized was the training?	73.96	19.98	3.00	100.00	65.00	87.00	25
4.00		78.56	18.25	31.00	100.00	70.50	91.50	18
5.00		74.44	23.40	3.00	100.00	74.75	87.25	16
2.00	How well prepared do you feel to deliver Mind the Mind workshops after attending the training for volunteers?	59.32	23.18	13.00	100.00	45.00	75.00	25
4.00		62.39	25.28	10.00	95.00	45.50	80.00	18
5.00		56.19	24.87	18.00	100.00	40.75	66.25	16
2.00	The trainer/s connected with the group and made people feel comfortable.	86.72	19.56	18.00	100.00	85.00	100.00	25
4.00		84.50	20.47	12.00	100.00	82.25	94.00	18
5.00		82.38	20.94	28.00	100.00	74.50	100.00	16
2.00	The trainer/s knew what they were talking about.	85.84	14.98	49.00	100.00	78.00	100.00	25
4.00		81.89	18.28	33.00	100.00	72.75	98.25	18
5.00		86.19	14.37	56.00	100.00	81.00	97.00	16
2.00	The trainer/s was/were able to explain things clearly.	84.60	16.40	35.00	100.00	80.00	100.00	25
4.00		83.78	18.70	32.00	100.00	75.25	95.75	18
5.00		86.88	11.00	70.00	100.00	76.00	97.75	16
2.00	The training got people involved and interacting.	80.76	19.16	28.00	100.00	71.00	96.00	25
4.00		80.44	17.48	43.00	100.00	68.75	95.00	18
5.00		77.31	18.81	35.00	100.00	64.75	92.50	16

Table 12 continued

wave	Question	M	SD	Min	Max	Q1	Q3	N
2.00	The training had a lot of relevant information.	67.36	26.48	1.00	100.00	50.00	91.00	25
4.00		61.33	28.43	8.00	100.00	39.50	81.75	18
5.00		62.88	32.80	0.00	100.00	39.00	91.00	16
2.00	The training made me think of things in a different way or see a different perspective.	54.80	26.34	4.00	100.00	39.00	70.00	25
4.00		48.28	30.65	3.00	100.00	22.00	70.75	18
5.00		50.31	34.68	2.00	100.00	19.00	82.25	16
2.00	The training was interesting.	68.96	24.62	0.00	100.00	59.00	85.00	25
4.00		64.94	29.12	12.00	100.00	42.50	88.75	18
5.00		63.00	28.89	14.00	100.00	42.00	83.50	16
2.00	What is your overall satisfaction with the training?	66.32	22.47	18.00	94.00	53.00	88.00	25
4.00		59.94	27.27	15.00	100.00	46.25	84.00	18
5.00		63.56	25.73	19.00	100.00	51.50	80.75	16

Note. Higher numbers indicate higher perceived extents of the respective variable.

744

745 **2.4.12 Additional volunteer tasks.** Volunteers' additional tasks during their
746 mandate were assessed using items constructed by the author at T2, T4, and T5. Table 13
747 displays overall involvement in additional tasks, while table 14 shows detailed counts per
748 task.

749 Firstly, single-choice evaluations were undertaken on whether volunteers had been
750 involved in additional volunteer tasks during their mandate, including (1) no, and (2) yes.

751 Secondly, a multiple-choice indication specifying, if applicable, additional tasks vol-
752 unteers had been involved in beyond delivering workshops or attending trainings, including
753 "Acquisition of schools", "Social media posts", "Informative materials (e.g. flyers, presenta-
754 tions)", "Interactive psychopathology lectures", "Other mental health-related events relat-
755 ing to the Mind the Mind campaign", "Other [please specify]".

Table 13
Counts of volunteers engaged in additional tasks beyond delivering workshops

wave	N (No)	N (Yes)	% (No)	% (Yes)
2.00	21	20	21.65	20.62
4.00	11	18	11.34	18.56
5.00	10	17	10.31	17.53

756

Table 14
Counts of volunteer involvement in so-called 'additional tasks' (not delivering workshops)

	Wave		
Task type	2	4	5
Acquisition of schools	13	11	9
Informative materials (e.g. flyers, presentations)	NA	NA	1

Table 14 continued

	Wave		
Task type	2	4	5
Interactive psychopathology lectures	4	3	5
Other mental-health related events relating to the Mind the Mind campaign	2	2	1
Social media posts	3	6	7

Note. Under the option [Other] stated tasks included: Delivering trainings (N = 3), updating the campaign website (N = 1).

2.5 Data analytic strategy

As pre-registered, all outcome variables of inferential statistical analyses were centered on their grand mean, and effect sizes of linear mixed models were interpreted in terms of beta regression weights, with standard deviations [0; 1] as units. We employed a range of statistical models for data analysis. Exact modeling procedures are reported below (see 3 Results).

Latent growth model fit was evaluated with the χ^2 statistic, Comparative Fit Index (CFI), and Standardized Root Mean Square Error of Approximation (RMSEA), with nonsignificant χ^2 values indicating model fit, and CFI (RMSEA) values $\geq .97$ ($\leq .08$) suggesting good fit (Hu & Bentler, 1999; Kline, 2011). For factor-analytical solutions, CFI and RMSEA were inspected, accordingly. For the bivariate latent growth model, parameter estimates were inspected to understand the directionality, statistical significance and strength of relationships. Path estimates of 0.10, 0.20, and 0.30 are considered as relatively small, typical, and relatively large (Gignac & Szodorai, 2016).

In addition to the pre-registration, statistical assumptions were tested for our three primary endpoints (`satisfaction`, `organizational commitment`, `intent to remain`). Homoscedasticity was investigated via plotting the fitted values against the square root of the standardized residuals as a measure of residual size. Following visual inspections, a Breusch Pagan test was not indexed. Deviations of residuals from normality were inspected visually via Q-Q-plots, and statistically via Shapiro-Wilk-Tests, indicating violations of normality-assumptions for `satisfaction` and `intent to remain` in the treatment group, and for all three variables in the control group, each $p < 05$. Levene tests for variance homogeneity between conditions on the primary endpoints revealed violations for organizational commitment, $F(1, 134) = 3.84$, $p = .052$, and intent to remain, $F(1, 134) = 4.49$, $p = .036$.

Deviating from the pre-registration, and according to Edelsbrunner & Thurn's (2024) suggestions, the core confirmatory hypotheses (H1, H2, H3) were re-examined by estimating a Bayes factor using Bayesian Information Criteria (Wagenmakers, 2007), comparing the fit of the data under the null hypothesis to the alternative hypothesis. This procedural decision was undertaken post-hoc, and in large part due to non-significant p-values not allowing meaningful conclusions. NHST procedures assume that the H0 is correct. In this sense, a non-significant p-value could either allow the conclusion that the H0 is correct or that a type II error has occurred – without information about which of these cases could

explain the non-significant NHST results (Edelsbrunner & Thurn, 2024; see also Lakens, 2013, 2014).

3 Results

3.1 Prediction of satisfaction, commitment, and intent to remain by re-displaying volunteers' initially stated motivation

Table 15
Simple randomization results

	Condition			
Wave	N (Display)	N (No Display)	% (Display)	% (No Display)
2.00	21	20	51.22	48.78
3.00	11	28	28.21	71.79
4.00	14	15	48.28	51.72
5.00	10	17	37.04	62.96

Note. Percentages reflect the proportion of individuals in each condition.

Table 15 displays the distributions of individuals assigned to either the intervention (display) or control (no display) condition via simple randomization.

To test hypotheses 1 to 3, we conducted three separate linear mixed model analyses. The time-varying treatment variable (display vs. no display of own motivation) was entered as predictor of the time-varying (H1) overall satisfaction, (H2) commitment, and (H3) intent to remain variables. The random effects structure allowed for varying intercepts and slopes for both `condition` and `wave` across participants (`token`), accounting for the nested data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their responses to the treatment, and the timing of the measurements.

Results suggest that the re-display of volunteers' initially stated motivation yielded no effect on (1) satisfaction, $\widehat{\beta} = 0.36$, 95% CI $[-0.60, 1.31]$, $t(103.72) = 0.73$, $p = .466$, (2) commitment, $\widehat{\beta} = 0.11$, 95% CI $[-0.41, 0.63]$, $t(82.26) = 0.42$, $p = .672$, and (3) intent to remain, $\widehat{\beta} = -0.47$, 95% CI $[-1.44, 0.51]$, $t(108.92) = -0.94$, $p = .349$, between groups. See table 16 for summaries of the mixed effects models, and figures 12, 14, and 15 for visualizations of descriptive volunteer overall satisfaction (figure 13 for volunteer job satisfaction scores), commitment, and intent to remain scores by condition and wave, respectively.

Due to the unsaturated data base, in a multiverse-approach, we fit three separate, linear mixed models with Markov Chain Monte Carlo (MCMC, e.g. Hastings, 1970) using the R-package *brms* (Version 2.21.0, Bürkner, 2017), with a total of 2000 iterations per chain, of which the first 1000 were discarded as warm-up. The models were configured with a Gaussian family for continuous outcomes, applying weak informative priors. The variables and fixed effects were the same as in the frequentist tests from H1 to H3, albeit not centered on their grand mean. Due to model restraints, the random effects structures had to be re-specified, allowing random intercepts for participants (`token`), as well as random slopes for both `condition` and `wave`, simultaneously. The Bayes Factors of $BF_{H1} = 0.19$ ($BF_{H2} = 0.02$) indicated that the data are about $\frac{2}{3}$rd (100) times more likely under the null hypothesis

Table 16
Summaries of the lmer models for H1, H2, and H3

	H1 | Satisfaction	H2 | Commitment	H3 | Remain
Intercept	−0.52	0.24	0.70
	[−1.23; 0.18]	[−0.16; 0.63]	[−0.01; 1.40]
Condition	0.36	0.11	−0.47
	[−0.60; 1.31]	[−0.41; 0.63]	[−1.44; 0.51]
Wave	0.18	−0.06	−0.18
	[−0.02; 0.37]	[−0.18; 0.05]	[−0.39; 0.03]
Condition * Wave	−0.12	−0.08	0.09
	[−0.39; 0.15]	[−0.23; 0.07]	[−0.19; 0.38]
AIC	375.32	295.84	399.79
BIC	407.03	327.88	431.83
Log Likelihood	−176.66	−136.92	−188.89
Num. obs.	132	136	136
Num. groups: token	50	50	50
Var: token (Intercept)	0.24	0.01	0.02
Var: token conditionno display	0.01	0.06	0.21
Cov: token (Intercept) conditionno display	0.05	0.02	−0.06
Var: token.1 (Intercept)	0.47	0.32	0.14
Var: token.1 wave	0.01	0.01	0.00
Cov: token.1 (Intercept) wave	−0.06	0.05	0.02
Var: Residual	0.52	0.14	0.63

* Null hypothesis value outside the confidence interval. p-values for fixed effects calculated using Satterthwaite's method. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals have been calculated using Wald method. Right side of the models: $condition * wave + (1 + condition|token) + (1 + wave|token)$.

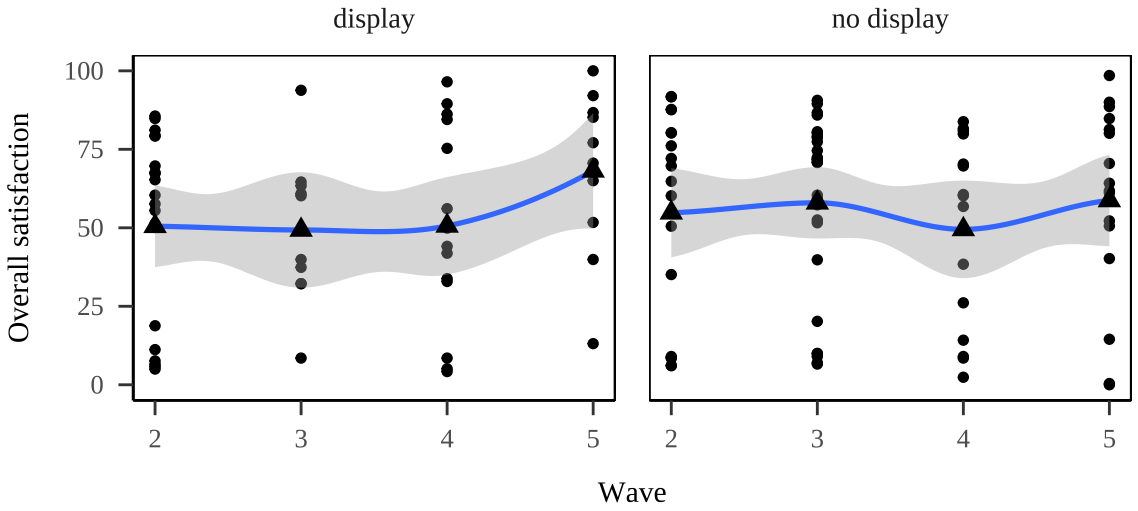

Figure 12. Descriptive volunteer overall satisfaction scores by wave and condition.

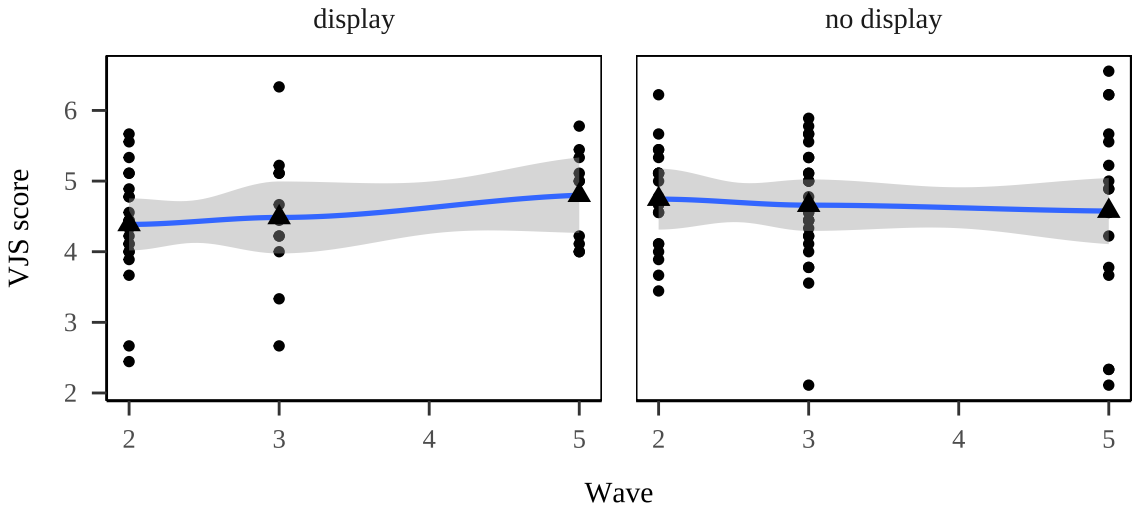

Figure 13. Descriptive volunteer job satisfaction scores by wave and condition.

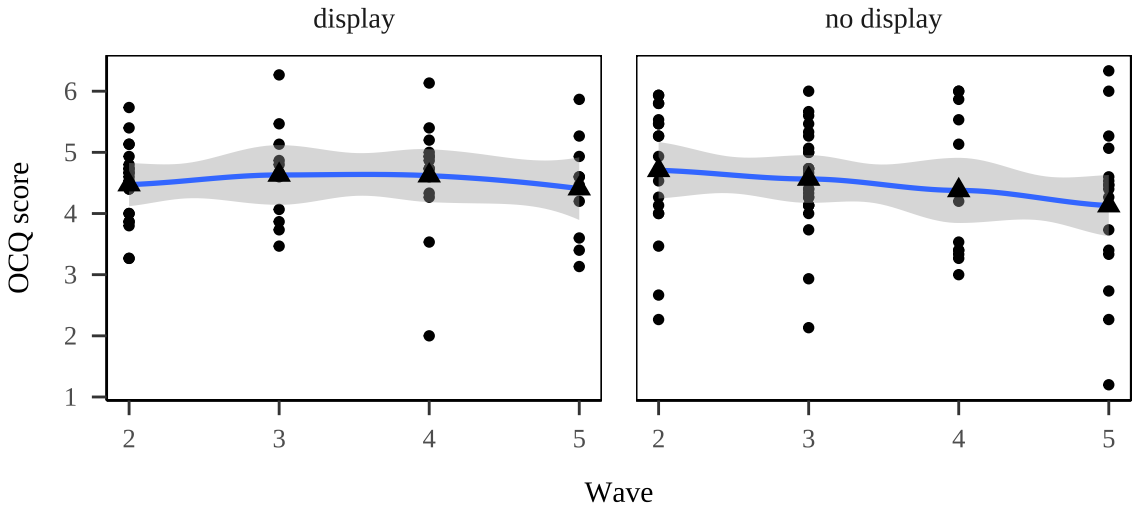

Figure 14. Descriptive volunteer organizational commitment scores by wave and condition.

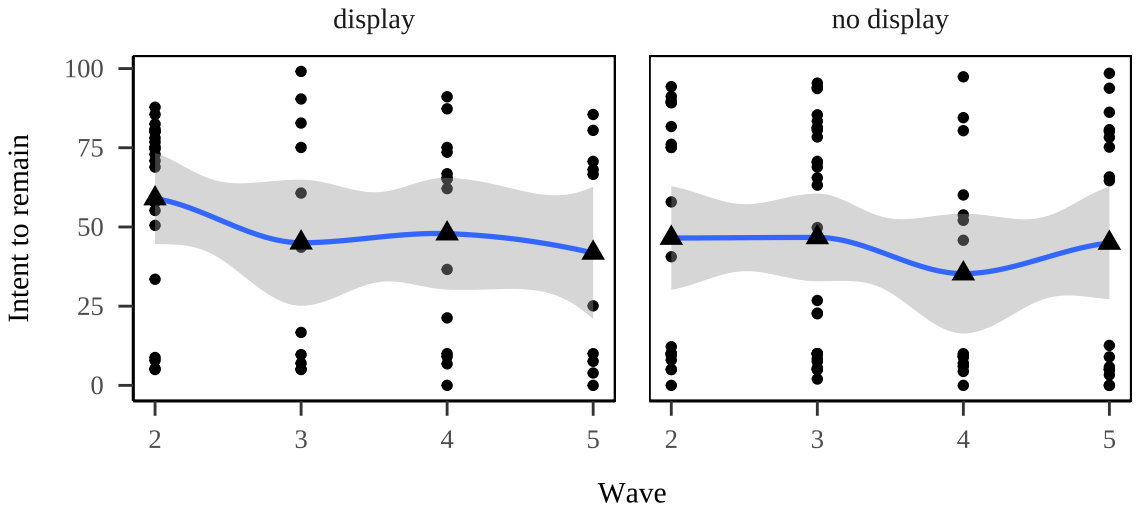

Figure 15. Descriptive volunteer intent to remain scores by wave and condition.

than under the alternative hypothesis. These results represent anecdotal (strong) evidence in favour of the null hypotheses for H1 (H2). However, a Bayes Factor of $BF_{H3} = 1.10$ indicated that the data is about $\frac{1}{3}$rd more likely under the alternative hypothesis than under the null hypothesis with regard to H3. This result represents anecdotal evidence in favour of the alternative hypothesis for H3. The code for Bayesian multiverse re-analyses can be found in the online supplement.

3.2 Experiences in volunteering

Deviating from the pre-registration, due to bad latent growth model fit (each $p_{\chi^2} < .01$, indicating no model fit, with CFI $< .70$, and RMSEA $> .30$), multiverse reanalyses of EH1, EH2, and EH3 were calculated using linear mixed models instead. Table 17 summarizes the results of the LMMs for (EH1) organizational commitment, (EH2) satisfaction, and (EH3) intent to remain across waves. Latent growth model codes and results are available in the online supplement.

3.2.1 Organizational commitment. To test EH1, we conducted a linear mixed model analysis. The time variable `wave` was entered as predictor of organizational commitment. The random effects structure allowed for varying intercepts and slopes across participants (`token`), accounting for the nested data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their baseline commitment, and the trajectories.

Contrary to the hypothesis, results show a significant main effect for wave, $\hat{\beta} = -0.08$, 95% CI $[-0.14, -0.02]$, $t(38.60) = -2.45$, $p = .019$, but in an opposite direction, indicating that volunteers' organizational commitment, on average, decreased by .08 units per one standard deviation increase in the time-related variable `wave`. For organizational commitment, the estimated subject variance was 0.02, whereas the estimated residual variance was 0.15, indicating a negligible amount of between-subjects variability, and relatively little noise. Figure 16 shows the changes in volunteers' organizational commitment across data

Table 17
Summaries of the lmer models for EH1, EH2, and EH3

	EH1 | Commitment	EH2 | Satisfaction	EH3 | Remain
Intercept	0.14	−0.31	0.02
	[−0.08; 0.35]	[−0.80; 0.17]	[−0.24; 0.28]
Wave	−0.08*	0.10	−0.01
	[−0.14; −0.02]	[−0.02; 0.23]	[−0.12; 0.09]
AIC	430.80	362.45	596.77
BIC	450.79	379.75	616.77
Log Likelihood	−209.40	−175.23	−292.39
Num. obs.	207	132	207
Num. groups: token	73	50	73
Var: token (Intercept)	0.63	0.80	0.00
Var: token wave	0.02	0.01	0.02
Cov: token (Intercept) wave	0.02	−0.07	0.00
Var: Residual	0.15	0.52	0.84

* Null hypothesis value outside the confidence interval. p-values for fixed effects calculated using Satterthwaite's method. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals have been calculated using Wald method. Right side of the models: $1 + wave + (1 + wave|token)$.

collection waves.

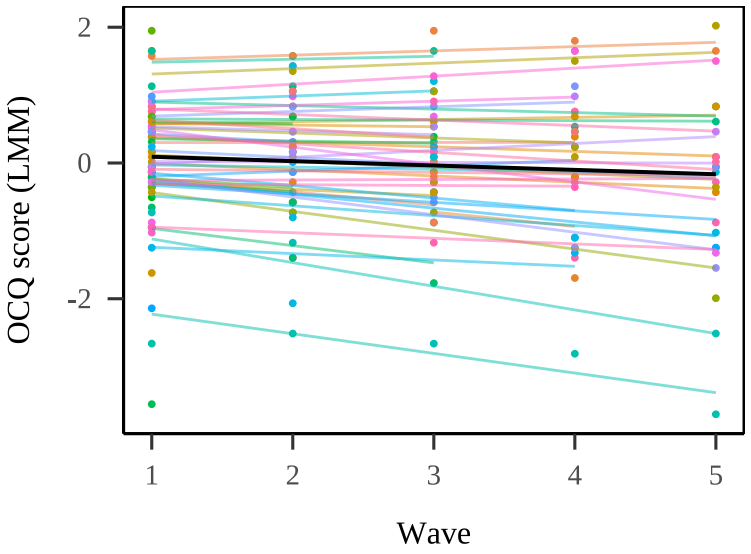

Figure 16. Linear mixed model-estimated predictions of volunteer organizational commitment by wave and participants.

3.2.2 Satisfaction. To test EH2, we conducted a linear mixed model analysis. The time variable `wave` was entered as predictor of overall satisfaction. The random effects structure allowed for varying intercepts and slopes across participants (`token`), accounting for the nested data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their baseline overall satisfaction, and the trajectories.

Contrary to the hypothesis, results show a null-effect for wave, $\hat{\beta} = 0.10$, 95% CI $[-0.02, 0.23]$, $t(33.32) = 1.67$, $p = .104$, indicating that progressing of the volunteer mandate does not evoke differences in volunteers' overall satisfaction. Figure 17 shows the changes in volunteers' overall satisfaction across data collection waves. The same non-significant result pattern holds true for satisfaction, operationalized by the multi-item VJS questionnaire, albeit an apparent increase in dispersion (see figure 18 for predicted values).

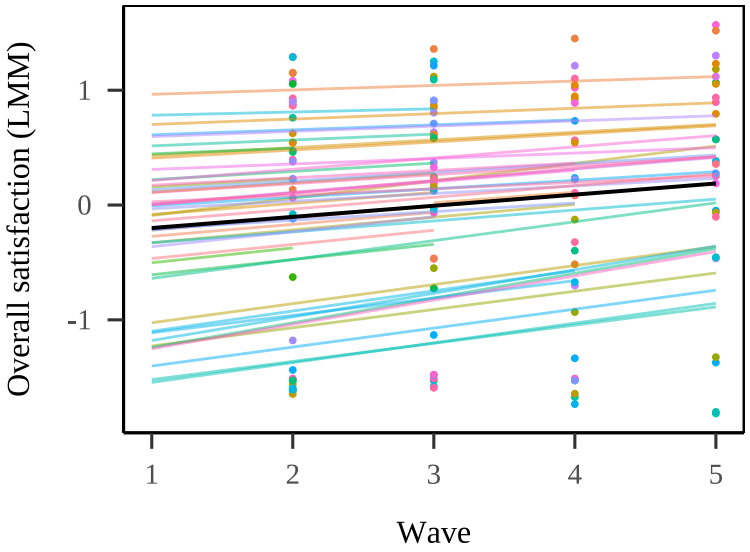

Figure 17. Linear mixed model-estimated predictions of volunteer overall satisfaction scores by wave and participants.

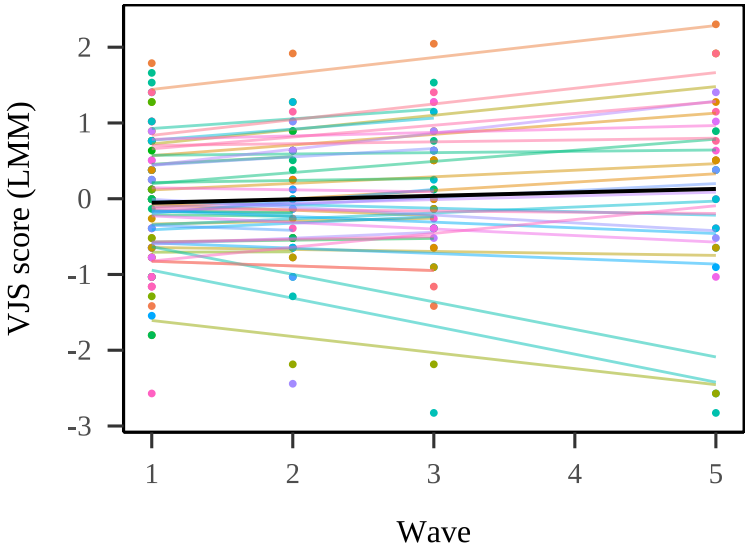

Figure 18. Linear mixed model-estimated predictions of volunteer job satisfaction scores by wave and participants.

3.2.3 Intent to remain. To test EH3, we conducted a linear mixed model analysis. The time variable `wave` was entered as predictor of overall satisfaction. The random effects structure allowed for varying intercepts and slopes across participants (`token`), accounting for the nested data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their baseline overall satisfaction, and the trajectories.

Contrary to the hypothesis, results show a null-effect for wave, $\hat{\beta} = -0.01$, 95% CI $[-0.12, 0.09]$, $t(60.74) = -0.26$, $p = .794$, indicating that progressing of the volunteer mandate does not evoke differences in volunteers' intent to remain. Figure 19 shows the changes in volunteers' intent to remain across data collection waves.

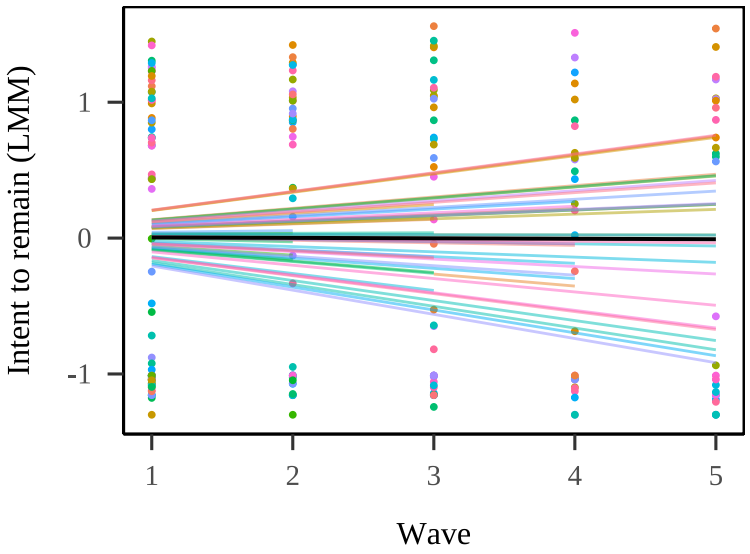

Figure 19. Linear mixed model-estimated predictions of volunteer intent to remain by wave and participants.

3.2.3.1 Predicting volunteer intent to remain by initial commitment. To test EH5, we conducted a linear mixed model analysis. Volunteers' initial commitment (measured at T1, recoded to `initial_commitment`) was entered as predictor of overall satisfaction. The random effects structure allowed for varying intercepts and slopes for `wave` across participants (`token`), accounting for the nested and longitudinal data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their baseline overall intent to remain, and the trajectories.

Results show a null-effect for initial commitment, $\hat{\beta} = -0.08$, 95% CI $[-0.37, 0.20]$, $t(176.60) = -0.57$, $p = .569$, indicating that initial volunteer commitment does not predict subsequent volunteer intent to remain. Figure 20 shows the changes in volunteers' intent to remain across data collection waves.

3.2.4 Public speaking anxiety. To test EH4, we conducted a linear mixed model analysis. The time variable `wave` was entered as predictor of public speaking anxiety. The random effects structure allowed for varying intercepts across participants (`token`), accounting for the nested data structure. Random slopes did not converge. Specifically, this acknowledges that individual participants may exhibit variability in their baseline public

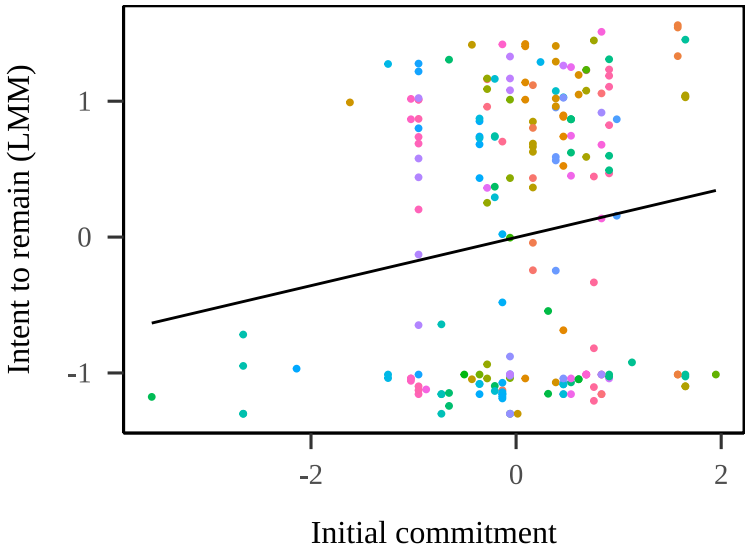

Figure 20. Linear mixed model-estimated predictions on volunteer intent to remain by initial commitment by wave and participants.

speaking anxiety.

Results show a significant main effect of wave, $\hat{\beta} = -0.08$, 95% CI $[-0.14, -0.03]$, $t(72.35) = -2.94$, $p = .004$, indicating that volunteers' public speaking anxiety, on average, decreased by .08 units per one standard deviation increase in the time-related variable `wave`. For public speaking anxiety, the estimated subject variance was 0.76, and the estimated residual variance was 0.21, indicating a substantial amount of between-subjects variability. Figure 21 shows the changes in volunteers' public speaking anxiety across data collection waves.

3.2.4.1 Associations between public speaking anxiety and number of workshops delivered. Since we were interested in testing whether the levels, as well as the changes in public speaking anxiety, correlated with the number of workshops delivered, we employed a linear latent growth curve model to test these hypotheses simultaneously. The model predicting number of workshops delivered across the data collection wave by volunteers' average working alliance demonstrated bad model fit, $\chi^2_{(N=9,df=11)} = 80.96$, $p < .001$, CFI = 0.35, RMSEA, 0.814, SRMR = 0.478.

Results, albeit the model fit implying that the relationships specified in the model might not be accurate representations of the underlying data, suggest that public speaking anxiety and number of workshops were not associated. Specifically, the lack of significant covariance between the intercepts (–0.079, $p = 0.208$) and slopes (–0.027, $p = 0.244$) suggests that there is no strong evidence of the number of workshops delivered affecting the initial level of public speaking anxiety or its growth over time (and vice versa). The covariance between the public speaking anxiety intercept and the workshop intercept is negative (–0.079) but not statistically significant ($p = 0.208$), suggesting that the initial level of public speaking anxiety is not significantly related to the initial number of workshops delivered. Similarly, the covariance between the public speaking anxiety slope and the workshop slope is also negative (–0.027), but not statistically significant ($p = 0.244$), suggesting no

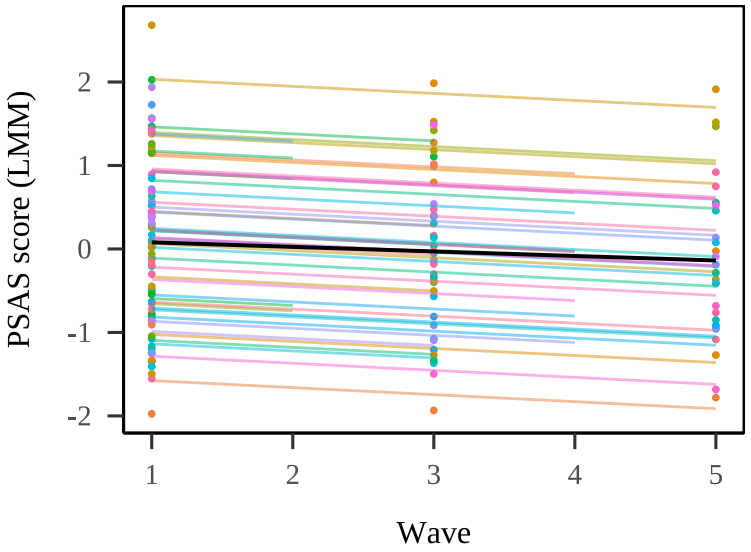

Figure 21. Linear mixed model-estimated predictions on volunteer public speaking anxiety by wave and participants.

significant relationship between the change in public speaking anxiety and the change in the number of workshops delivered over time.

However, there were significant relationships within each domain, specifically, the significant positive covariance (0.135, $p = 0.002$) suggests that individuals with higher initial levels of public speaking anxiety tend to have steeper increases (or less steep decreases) in anxiety over time, and the significant positive covariance (0.661, $p = 0.028$) suggests that individuals who delivered more workshops initially tend to deliver more workshops at an increasing rate over time.

Figure 22 displays the changes in volunteers' public speaking anxiety, and number of delivered workshops across waves and participants.

3.2.5 Attachment.

3.2.5.1 Associations between volunteer attachment and motivation.

Pearson's correlation coefficient was computed to assess possible relationships between attachment styles (as measured via ECR-RD8) and facets of volunteer motivation. Table 18 (table 19) shows the correlation matrix for the VFI (VESD), respectively.

Regarding the VFI, there was a significant relationship between the facet *career* and attachment anxiety, $r = .34$, 95% CI $[.03, .58]$, $t(39) = 2.24$, $p = .031$. Regarding the VESD, there were significant relationships between attachment avoidance and the facets *competence*, $r = -.49$, 95% CI $[-.69, -.22]$, $t(39) = -3.53$, $p = .001$, *engagement*, $r = -.45$, 95% CI $[-.66, -.16]$, $t(39) = -3.13$, $p = .003$, and the overall VESD *score*, $r = -.33$, 95% CI $[-.58, -.03]$, $t(39) = -2.21$, $p = .033$.

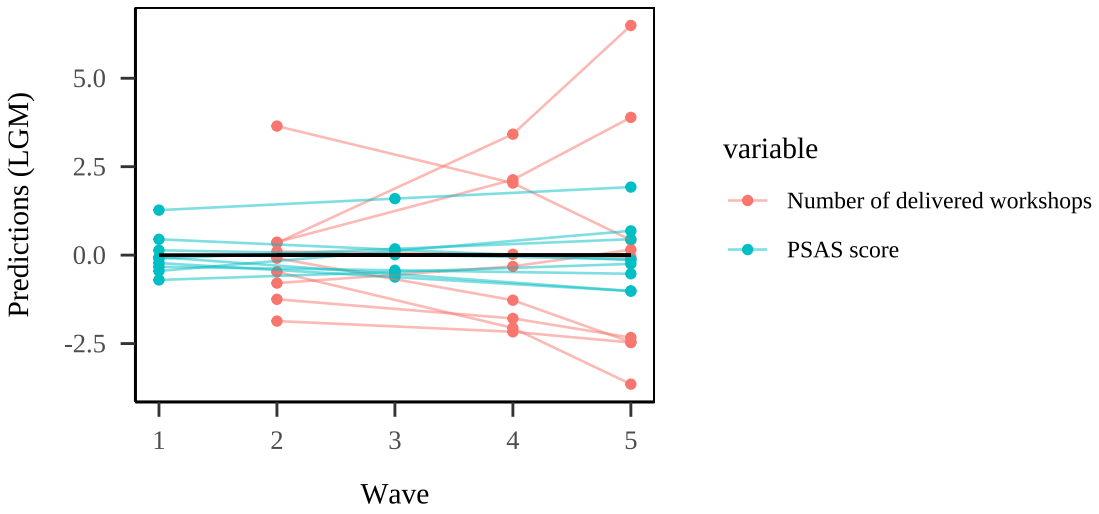

Figure 22. Bivariate latent growth model-estimated predictions of volunteer public speaking anxiety and number of workshops delivered by wave and participants.

Table 18
Correlation matrix of motivational facets (VFI) and attachment style (ECR-RD8)

	protective	values	career	social	understanding	enhancement	score	ecr_bang	ecr_bver
vfi_protective	1 ***	0.08	0.15	0.37 *	0.23	0.53 ***	0.6 ***	0.22	0.1
vfi_values	0.08	1 ***	0.24	0.08	0.32	0.25	0.46 **	0.26	-0.16
vfi_career	0.15	0.24 *	1 ***	0.32	0.36 *	0.43 **	0.69 ***	0.34	0.11
vfi_social	0.37 **	0.08	0.32 **	1 ***	0.24	0.41 *	0.63 ***	0.02	-0.21
vfi_understanding	0.23 *	0.32 **	0.36 **	0.24 *	1 ***	0.41 *	0.63 ***	0.05	0.17
vfi_enhancement	0.53 ***	0.25 *	0.43 ***	0.41 ***	0.41 ***	1 ***	0.81 ***	0.2	-0.13
vfi_score	0.6 ***	0.46 ***	0.69 ***	0.63 ***	0.63 ***	0.81 ***	1 ***	0.29	-0.03
ecr_bang	0.22	0.26	0.34 *	0.02	0.05	0.2	0.29	1 ***	0.34
ecr_bver	0.1	-0.16	0.11	-0.21	0.17	-0.13	-0.03	0.34 *	1 ***

Note. Correlation coefficients are Pearson's r. *p $<$ .05, **p $<$ .01, ***p $<$ .001.

Table 19
Correlation matrix of motivational facets (VESD) and attachment style (ECR-RD8)

	valuecongruence	autonomy	competence	relatedness	engagement	recommendation	offerings	loyalty	score	ecr_bang	ecr_bver
vesd_valuecongruence	1 ***	0.59 ***	0.26	-0.08	0.24	0.38 *	0.12	0.29	0.59 ***	0.14	-0.07
vesd_autonomy	0.59 ***	1 ***	0.34	-0.23	0.15	0.52 ***	-0.03	0.35	0.56 ***	-0.07	0.08
vesd_competence	0.26 *	0.34 **	1 ***	0.32	0.59 ***	0.48 ***	0.34	0.38 *	0.74 ***	-0.31	-0.49 *
vesd_relatedness	-0.08	-0.23	0.32 **	1 ***	0.29	0.01	0.1	0.02	0.24	-0.26	-0.28
vesd_engagement	0.24 *	0.15	0.59 ***	0.29 *	1 ***	0.52 ***	0.41 *	0.34	0.72 ***	-0.15	-0.45
vesd_recommendation	0.38 **	0.52 ***	0.48 ***	0.01	0.52 ***	1 ***	0.25	0.56 ***	0.77 ***	0.13	-0.14
vesd_offerings	0.12	-0.03	0.34 **	0.1	0.41 ***	0.25 *	1 ***	0.32	0.54 ***	0.05	-0.21
vesd_loyalty	0.29 *	0.35 **	0.38 **	0.02	0.34 **	0.56 ***	0.32 **	1 ***	0.69 ***	0.05	-0.16
vesd_score	0.59 ***	0.56 ***	0.74 ***	0.24 *	0.72 ***	0.77 ***	0.54 ***	0.69 ***	1 ***	-0.07	-0.33
ecr_bang	0.14	-0.07	-0.31	-0.26	-0.15	0.13	0.05	0.05	-0.07	1 ***	0.34
ecr_bver	-0.07	0.08	-0.49 **	-0.28	-0.45 **	-0.14	-0.21	-0.16	-0.33 *	0.34 *	1 ***

Note. Correlation coefficients are Pearson's r. *p < .05, **p < .01, ***p < .001.

3.2.5.2 Prediction of working alliance by volunteer attachment style. Deviating from the pre-registration, due to non-convergence of the mixed effects models caused by lack of repeated measures, non-mixed linear regressions were calculated to predict working alliance (tasks, bond, goals) by different attachment style measures and indices. Figure 23 displays working alliance, regressed on RQ2 attachment styles, figure 24 displays working alliance, regressed on RQ2 attachment dimensions, and figure 25 displays working alliance, regressed on ECR-RD8 attachment dimensions, respectively.

Predictions of working alliance by ECR-RD8 scores did not yield significant effects. However, attachment anxiety as measured by a continuous RQ2 index significantly predicted goal orientation in working alliance, $b = -0.11$, 95% CI $[-0.18, -0.03]$, $t(39) = -2.81$, $p = .008$, $R^2 = .17$, 90% CI $[0.03, 0.36]$, $F(1, 39) = 7.89$, $p = .008$.

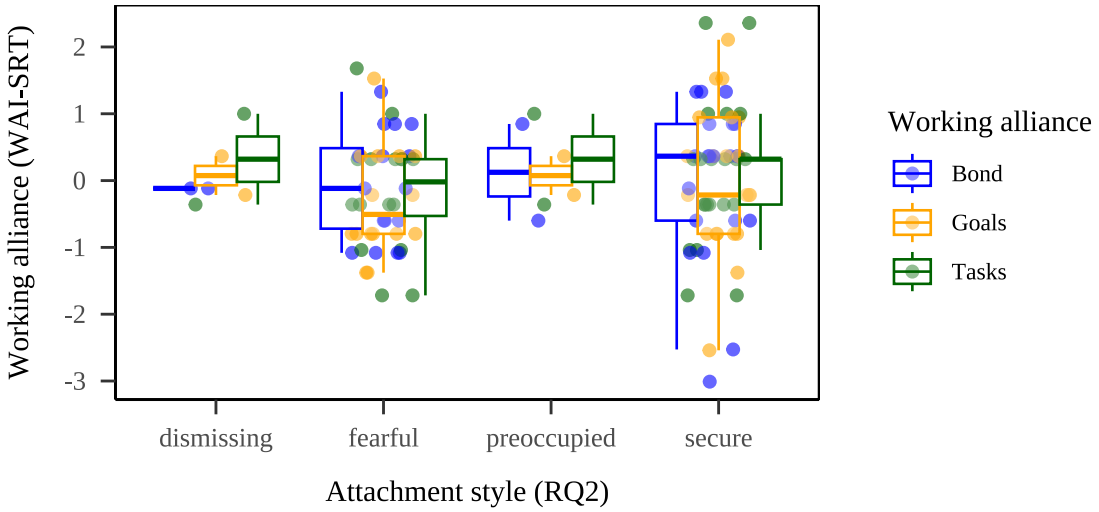

Figure 23. Working alliance (WAI-SRT) regressed on categorical volunteer attachment styles (RQ2).

3.2.6 Mental health. Deviating from the preregistration, we conducted a linear mixed model analysis to test EH9. This was due to non-convergence of the pre-registered latent growth model. The time variable `wave` was entered as predictor of PHQ-4 scores. The random effects structure allowed for varying intercepts across participants (`token`), and random slopes for participants across data collection points (`wave`), accounting for the nested and longitudinal data structure. Specifically, this acknowledges both that individual participants may exhibit variability in their baseline mental health, and their mental health trajectories. Table 23 shows the changes in mental health across waves.

Results show a borderline-nonsignificant main effect of wave, $\hat{\beta} = 0.11$, 95% CI $[0.00, 0.21]$, $t(35.55) = 2.03$, $p = .050$, indicating that volunteers' PHQ-4 score, on average, increased by .11 units per one standard deviation increase in the time-related variable `wave`. For PHQ-4 scores, the estimated subject variance was 0.03, and the estimated residual variance was 0.25, indicating a negligible amount of between-subjects variability, and relatively little noise. Figure 26 shows the changes in volunteers' mental health across data collection waves.

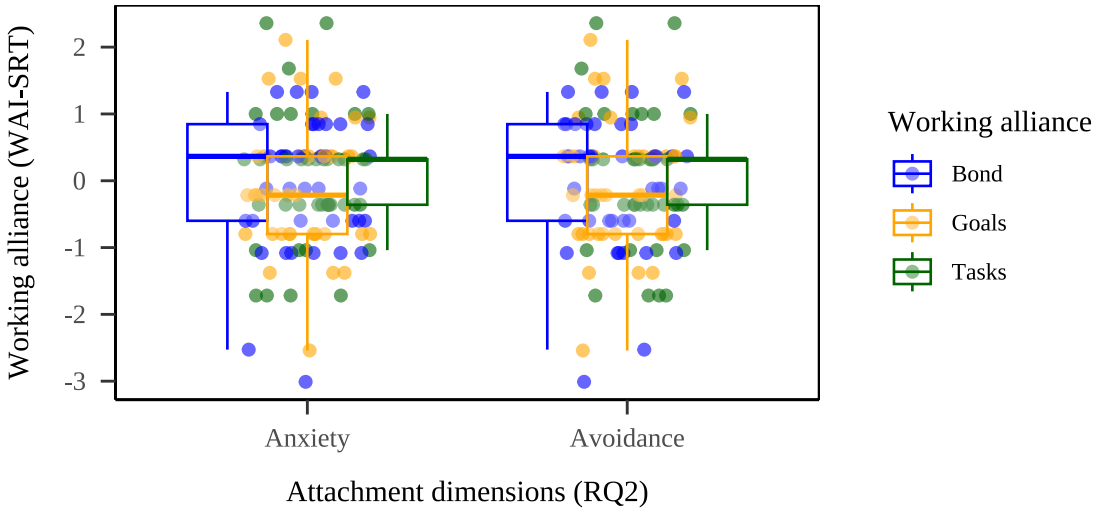

Figure 24. Working alliance (WAI-SRT) regressed on continuous volunteer attachment dimensions (RQ2).

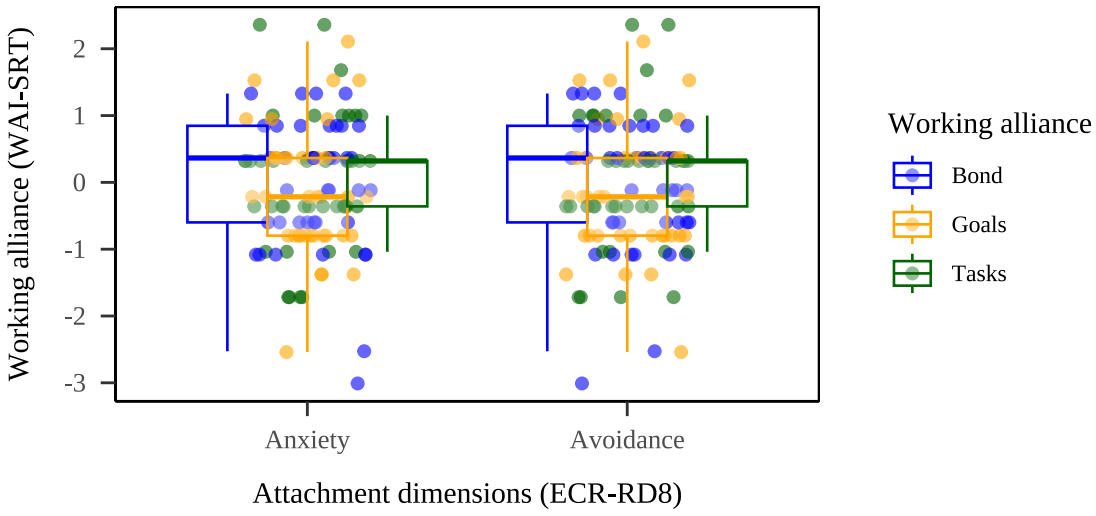

Figure 25. Working alliance (WAI-SRT) regressed on continuous volunteer attachment dimensions in romantic relationships (ECR-RD8).

Table 20
Summaries of the linear regression models for EH8, predicting working alliance by attachment style (RQ2)

	Tasks	Bond	Goals
Intercept	0.32	−0.12	0.07
	[−1.08; 1.72]	[−1.53; 1.29]	[−1.25; 1.40]
Fearful	−0.47	0.03	−0.36
	[−1.96; 1.02]	[−1.46; 1.53]	[−1.77; 1.04]
Preoccupied	0.00	0.24	0.00
	[−1.98; 1.98]	[−1.75; 2.23]	[−1.87; 1.87]
Secure	−0.23	0.09	−0.04
	[−1.69; 1.24]	[−1.38; 1.57]	[−1.43; 1.34]
R^2	0.02	0.00	0.03
Adj. R^2	−0.06	−0.08	−0.05
Num. obs.	41	41	41

* Null hypothesis value outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

Table 21
Summaries of the linear regression models for EH8, predicting working alliance by attachment anxiety (ECR-RD8)

	Tasks	Bond	Goals
Intercept	0.03	−0.04	−0.08
	[−0.27; 0.33]	[−0.35; 0.26]	[−0.36; 0.20]
Anxiety	−0.17	−0.06	−0.23
	[−0.48; 0.13]	[−0.37; 0.24]	[−0.51; 0.06]
R^2	0.03	0.00	0.06
Adj. R^2	0.01	−0.02	0.03
Num. obs.	41	41	41

* Null hypothesis value outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

Table 22
Summaries of the linear regression models for EH8, predicting working alliance by attachment avoidance (ECR-RD8)

	Tasks	Bond	Goals
Intercept	0.02	−0.04	−0.09
	[−0.28; 0.33]	[−0.34; 0.25]	[−0.37; 0.20]
Avoidance	−0.10	−0.20	−0.14
	[−0.41; 0.20]	[−0.49; 0.10]	[−0.42; 0.15]
R^2	0.01	0.04	0.02
Adj. R^2	−0.01	0.02	−0.00
Num. obs.	41	41	41

* Null hypothesis value outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

Table 23
Summary table of the lmer models for EH9, modeling changes in volunteer mental health by wave

	PHQ-4
Intercept	−0.22
	[−0.61; 0.17]
Wave	0.11*
	[0.00; 0.21]
AIC	328.90
BIC	346.38
Log Likelihood	−158.45
Num. obs.	136
Num. groups: token	50
Var: token (Intercept)	0.82
Var: token wave	0.03
Cov: token (Intercept) wave	−0.08
Var: Residual	0.25

* 0 outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

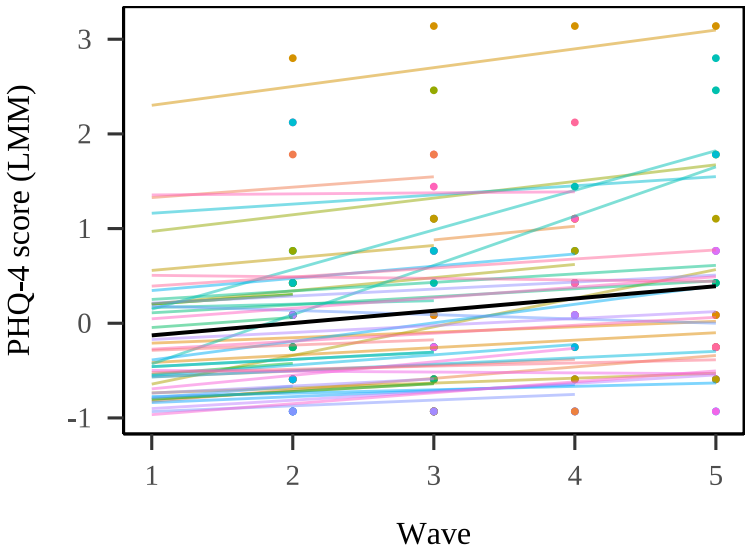

Figure 26. Linear mixed model-estimated predictions on volunteer mental health by wave and participants.

3.2.7 Predicting perceived workshop success by volunteers' workshop experiences. Forward stepwise linear regression analysis were conducted at each data collection wave surveying volunteers' workshop experiences to examine possible predictors of volunteer-rated workshop success, out of grand mean-centered variables related to volunteers' experiences in workshops, volunteer ratings on participant experiences, and participant age groups, and volunteer commitment. At each step, variables were chosen based on p-values, and AIC was used to limit the total number of variables included in the final models.

Starting with eight workshop- and volunteer-related variables that might be predictive of perceived workshop success, a stepwise regression model was able to reduce them to (depending on the time of data collection) between two and four, which were: Observer-rated participant interest (T2, T4, T5) and involvement (T2, T5), a target age-group of 15 to 18 years (T2, T5), a target age-group of 18 years and older (T2) as well as volunteers' overall experience in delivering workshops (T4) as predictors, to be explored in further studies. The coefficients for the predictors in the models are presented in table 24.

Table 24
Summary table of stepwise regression procedures for EH10 to identify possible predictors of volunteer-rated workshop success at T2, T4, and T5

	Wave 2	Wave 4	Wave 5
Intercept	-0.49^*	0.20	-0.28^*
	$[-0.82; -0.16]$	$[-0.04; 0.44]$	$[-0.54; -0.02]$
Overall workshop experience	-0.31	0.32^*	
	$[-0.77; 0.15]$	$[0.05; 0.58]$	
Perceived participant interest	1.02^*	0.42^*	0.75^*
	$[0.74; 1.31]$	$[0.08; 0.75]$	$[0.49; 1.01]$
Perceived participant involvement	0.39^*		0.39^*
	$[0.16; 0.62]$		$[0.11; 0.67]$
Age 15 to 18	0.10^*		0.09^*
	$[0.00; 0.21]$		$[0.00; 0.18]$
Age 18 and above	0.68^*		
	$[0.41; 0.95]$		
Volunteer OCQ score	0.17		
	$[-0.07; 0.41]$		
R^2	0.96	0.72	0.87
Adj. R^2	0.93	0.67	0.85
Num. obs.	16	16	23

* Null hypothesis value outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

Regarding involvement of volunteers, an exploratory forward stepwise linear regression analysis was conducted for data collected at T5, simultaneous to the end of the volunteer campaign mandate, to identify possible predictors of the number of workshops delivered by volunteers, out of ten grand mean-centered variables relating to workshop and training experiences, volunteer satisfaction, motivation, and public speaking anxiety. Procedures were the same as above for EH10.

The model yielded ten significant predictors to be explored in further studies, namely volunteers' overall workshop experience, perceived workshop success, perceived participant interest, satisfaction with trainings, tendency to recommend volunteering for the Mind the Mind campaign, but also overall volunteer satisfaction, motivation (as measured by VFI and VESD alike), public speaking anxiety, and feeling prepared to deliver workshops after having attended volunteer trainings. The coefficients for the predictors in the models are presented in table 25.

Table 25
Summary table of exploratory stepwise regression results to identify possible predictors of volunteer involvement as measured by number of workshops delivered at T5

	Wave 5
Intercept	-2.55^*
	$[-2.74; -2.37]$
Overall workshop experience	-1.61^*
	$[-1.73; -1.49]$
Perceived participant interest	2.37^*
	$[2.16; 2.59]$
Perceived workshop success	-1.43^*
	$[-1.55; -1.31]$
Feeling of preparedness to deliver workshops after volunteer trainings	-0.36^*
	$[-0.42; -0.31]$
Overall training satisfaction	1.13^*
	$[0.97; 1.28]$
Probability of recommending the campaign to other prospective volunteers	-0.89^*
	$[-0.97; -0.81]$
Overall volunteer satisfaction	2.31^*
	$[2.09; 2.53]$
PSAS score	-0.33^*
	$[-0.48; -0.17]$
VFI score	0.95^*
	$[0.86; 1.04]$
VESD score	-1.47^*
	$[-1.61; -1.33]$
R^2	1.00
Adj. R^2	0.99
Num. obs.	12

* 0 outside the confidence interval. Outcome variables were z-standardized on their grand mean. 95% Confidence Intervals in squared brackets.

4 Discussion

Drawing on a sample of German psychology students volunteering for "Mind the Mind", a Europe-wide active, workshop-based campaign for the destigmatization of mental disorders, the current, scientifically campaign-independent study examined effects of re-reading volunteers' initially stated motivation on their organizational commitment, overall volunteer satisfaction, and intent to remain in their role as volunteers. Additionally, (trajectories of) volunteers' experiences and personal variables were investigated, regarding

attachment style, working alliance, mental health, public speaking anxiety, and workshop, training, and task experiences.

4.1 Reminding volunteers of their initially stated motivation

Neither satisfaction (H1) or commitment (H2), nor intent to remain (H3) were influenced in any direction by the treatment, which consisted of reminding volunteers of their initially stated motivation to volunteer for the present campaign. Bayesian re-analyses yielded anecdotal evidence for the hypothesis of organizational commitment being positively influenced by re-displaying volunteer motivations. This is especially surprising against the fact that volunteers' *values* have consistently shown to predict all three core primary endpoints (Zhou & Kodama Muscente, 2023), and value-orientations constituting one of the most pronounced motivational facets of volunteering in the current sample as well. The treatment was designed to strengthen the volunteers' alignment with their values (as approximated by initial motivations to start volunteering in the present campaign in the first place). As volunteer satisfaction and intent to remain were assessed via, albeit established, single-item-measures, we cannot rule out mono-operationalization biases (Cole, Howard, & Maxwell, 1981), although exploratory re-analysis using a multi-item satisfaction measure adapted to the present sample, demonstrated null-effects all the same. Statistically speaking, re-analyses of H1 to H3 could be undertaken using Box-Cox transformations (Box & Cox, 1964) to account for the apparent violations of normality assumptions between the two designed conditions.

One exception is found in the Bayesian re-analysis of predicting organizational commitment by treatment, which allows leaning towards inferring anecdotal evidence in favor of a positive treatment effect. This pattern might have resulted from the multi-item nature of the OCQ questionnaire, allowing for potentially more sensitive construct measurement, and as the questionnaire has consistently presented excellent internal consistency ($\alpha = .82$ to .93 across a range of professions, Mowday et al., 1979).

Noticeably, visual inspections of trajectories and scattering for the core hypotheses outcomes on satisfaction and organizational commitment might pose an informative value on a descriptive level nonetheless: In the case of volunteer satisfaction as measured by a single-item overall, and a multi-item job satisfaction score, there seems to appear less scattering at later points of the data collection, accompanied by a slight descriptive increase in outcomes in the treatment condition, as opposed to stagnating trends (overall satisfaction), slight descriptive decreases (VJS score), and more variability between participant scores in the control condition. As for organizational commitment, a seemingly decreasing trend in the control condition opposes a visually more stable trend, including less scattering, for participants in the treatment condition throughout the data collection. Albeit to be interpreted with caution due to unbalanced conditional randomization, this might raise the question whether, given a broader data base, a chance can be seen herein to more specifically test points throughout volunteer mandates at which the administration of a potentially satisfaction and commitment-boosting intervention might be of higher relevance and indication, last not least taking into consideration ecological confounding factors from volunteers' life realities that are independent from their status as volunteers.

4.2 Volunteering experiences

4.2.1 Commitment, satisfaction, and intent to remain. Neither volunteers' overall satisfaction (EH2), nor intent to remain (EH3) significantly changed throughout the data collection. Contrary to the respective hypothesis (EH1), volunteer commitment even exhibited tendencies of decreasing. Interestingly, the scattering of volunteers' intent to remain did somewhat increase on a descriptive level ($SD_{T1} = 34.34$; $SD_{T5} = 37.42$), perhaps offering an interpretative explanation related to self-selection effects in that, with temporal progression of a volunteer mandate, questions on one's own intent to remain in the current position, or rather the intent to implement changes in one's personal or professional situations, might present themselves. This might be somewhat reinforced by the nature of the campaign management associated with the present sample, as the umbrella organization implements new tenders for campaign locations every year. So, there is a certain degree of uncertainty as to whether a campaign locations will be reappointed, questioning the prospect of repeated opportunities to volunteer. Drawing on organizational research, fluctuation of managing positions has been found to likely exhibit negative influences on the organization's overall performance (Andonović, Zhabevska-Zlatevski, Lisichkov, & Dimitrov, 2016). It remains subject to further investigation, especially in volunteering contexts, whether this effect might trickle down on levels of volunteers engaged in the field, pushing a circle of fluctuation and reduced intent to remain.

Given that 61.96% of the sample consist of individuals who volunteered for the campaign for the first time, Vecina et al.'s (2012) finding might be kept in mind, them stating *volunteer engagement* to portray a critical factor in shaping volunteer satisfaction, especially in new volunteers. For veteran volunteers, engagement has been shown to strengthen organizational commitment, which in turn predicts the intent to continue volunteering (ibid.). For the current sample, the motivational facet of volunteer engagement as measured by a self-determination based questionnaire exhibited descriptive increases ($engagement_{T1} = 4.67$; $engagement_{T5} = 4.89$), making this finding even more puzzling against the pronounced share of new campaign volunteers, though perhaps somewhat receiving potential explanatory context by Traeger et al. (2022), who state that voluntary work has seemingly shifted from a long-term to a more episodic and noncommittal nature. This, in turn, might negatively affect personal relevance of voluntary commitments due to a more culturally-based, volunteer-related decrease in prospects of voluntary work being of long-term nature.

Last not least, relocating one's own has become a non-reversible global trend (Li, Li, & Li, 2019), with residential mobility in late childhood and adolescence being associable with poorer mental health among university students, and mental health, in turn, perhaps negatively affecting available resources to engage in voluntary work. Drawing on *LinkedIn* data, in an insightful exploration of higher education graduates' job destinations for graduates of various colleges and universities in the United States, Conzelmann et al. (2024) find the proportion of university alumni still working in the same state as their alma mater to fluctuate between 40% and 80%, depending on specific educational institutions, and only nine US states import more graduates than their colleges produce.

These findings, in a seemingly evident way being associable with job and qualification-related relocation demands, might pose a hint towards another, more structurally based facet of volunteer-related "commitment-issues" in an ever-faster clocked world: Volunteering

for all of the umbrella organization's campaigns is possible during, or until two years after, the university qualification phase (EFPSA, 2021a). Given high relocation rates during, and after, university studies, a degree of uncertainty about one's own center of life in the near to medium future seems a logical consequence. Clashing with previously stated cultural changes in the temporal magnitude of volunteer commitments, it seems reasonable that factors unrelated to the volunteer work itself, but rather requirements beyond, might explain tendencies in decreased organizational commitment.

4.2.2 Public speaking anxiety. As predicted, public speaking anxiety significantly decreased throughout the data collection, albeit to an extent of clinical unremarkableness ($\widehat{beta} = –0.08$). In general, this finding appears consistent with the result that, upon temporal mandate progression, an increasing number of volunteers had received trainings to qualify for delivering workshops for the umbrella organization's campaign. It is known that skills-based trainings have the potential to reduce public speaking anxiety (Pribyl, Keaten, & Sakamoto, 2001). At the same time, Kroczek and Mühlberger (2023) found that rhetoric training based on virtual reality also has a positive effect on rhetoric performance in real life, especially with a supportive practice audience, possibly yielding an argument in favor of strengthening the attentional focus of trainings towards guaranteeing a development-oriented, error culture sensitive environment. As the between-subjects variability in public speaking anxiety was, however, non-negligible, further research should take into consideration specific volunteer training content and didactical characteristics, specifically addressing the question of what kinds of training interventions might be beneficial in training certain subgroups of volunteers with more or less pronounced public speaking anxiety.

4.2.2.1 Number of workshops and public speaking anxiety. Using bivariate latent growth curve analysis, no significant associations unfolded between public speaking anxiety and number of workshops delivered by volunteers. This result is limited in interpretability due to bad model fit (CFI = .35, RMSEA = .84), and only nine observations having been eligible for the model. However, as Muniz-Terrera et al. (2017) stated, parallel growth models estimate trajectories of two variables that are *known to be correlated*, whilst modeling correlations between latent growth factors of each dependent variable. Exploratory correlation analysis showed this to not be true in the case of public speaking anxiety and number of delivered workshops, $r = -.26$, 95% CI $[-.61, .17]$, $t(21) = -1.23$, $p = .231$. Given this circumstance, it seems additionally challenging to justify interpreting this finding at all, also hinting towards latent growth model mis-specifications.

As preliminary evidence might hint towards individuals higher in initial levels of public speaking anxiety tending to have steeper increases in anxiety over time, and individuals higher in initial levels of delivered workshops tending to deliver more workshops throughout their time as volunteers, this might support an account of recursive volunteering phenomena, in the sense that individual prerequisites might be predictive of domain-specific reinforcement of individually known, and established skill-developments and applications. However, as taken from the same latent growth curve analysis, this is also to be treated with caution, and subject to further investigations with a more saturated data base.

4.2.3 Attachment style and working alliance.

4.2.3.1 Associations between volunteer attachment and motivation. Measuring volunteer motivation with the Volunteer Functions Inventory (Clary et al., 1998), a significant positive relationship between the motivational facet "career", and attachment

anxiety as measured by the ECR-RD8 (Ehrenthal et al., 2021) was observed. Reminding penchant readers, the career-related function of volunteering refers to engagement-related chances of enhancing individual career prospects by providing job-related skills, networking opportunities, and experience. From an organizational-psychological point of view, the volunteer-rated extent of career-related opportunities inherent to the present non-profit organization may be of interest to further research. From a clinical point of view, it may be of interest to examine the precise psychological pathways that might explain this result pattern. One possible explanation could be attachment anxiety, as understood in terms of fear of rejection and abandonment, generalizing from attachment in romantic relationships to shaping alliances with other volunteers, colleagues, or the umbrella organization as a whole. From an attachment theory point of view, the idea of universal need for interpersonal closeness to create a sense of psychological safety (cf. Ehrenthal et al., 2009) might herein serve as a reminder of volunteers' high value orientation, pointing the focus of attention towards secure attachment to others last not least being related to secure attachment to oneself, as for example expressed in balanced individual emotion regulation (Eilert & Buchheim, 2023), and perhaps even being strengthed by initiating and continuing volunteer-related actions aligned with volunteers' values. As, from a convergent-validity perspective, 51.22% of volunteers exhibited a secure attachment style as measured via RQ2, this argument might be read with caution, though, as these considerations refer to a smaller proportion of individuals with an anxious attachment style in the current sample. On this notion, the question arises whether whether these results hold true in broader samples from the parent population of volunteers engaged in this campaign.

Measuring volunteer motivation with the Volunteer Engagement and Self-Determination Scale (Fernandes & Matos, 2023), significant negative relationships unfolded between the motivational facets "competence", "engagement", and the overall VESD-Score, and attachment avoidance as measured by the ECR-RD8. Competence refers to a sense of effectiveness while engaging in voluntary work, while engagement refers to the vigor, dedication and absorption during volunteer task performance. On a level of eye-validity, a possible interpretation could be found in the inference that volunteers' experiences of competency and engagement benefits from bringing to their work a low trait attachment avoidance (theoretically referring to discomfort with intimacy and interpersonal closeness), perhaps enabling volunteers to engage in their tasks while they are involved in local, regional, and (trans)national team structures that require contact and cooperation.

4.2.3.2 Prediction of working alliance by volunteer attachment style. Results yielded a significant negative relationship between attachment anxiety as measured by a continuous RQ2 index, and working alliance goals, in a sense that individuals with less attachment anxiety exhibited lesser goal orientation in alliance-building with target audiences. Neither attachment avoidance, operationalized via an RQ2 index, nor attachment-related anxiety and avoidance dimensions as measured via ECR-RD8, showed significant effects on volunteers' working alliance. Though statistically underpowered, for the sake of contextualization, this might pose a somewhat puzzling, yet explicable finding. Given there are no differences in working alliance bond between participating volunteers, it seems negligible to hypothesize that a stronger bond orientation might explain somewhat casual handling of agreement on working tasks, particularly for the duration of a short, education-based intervention without prospects of renewed interaction in the future. However, bond was the

most pronounced working alliance facet in the current sample, which, in turn, might explain an overall better working alliance as well as general skillfulness in interacting with target audiences (cf. Dinger et al., 2019), and improved facilitation competence (Bernecker et al., 2014), especially in combination with a high proportion of volunteers exhibiting a secure attachment style. This, in turn, might again positively influence workshop participants' and volunteers' ratings of intervention success, which remains, for the moment, subject to further investigation.

4.2.4 Mental health. Mental health screenings indicated longitudinal worsening of depression and anxiety symptoms alike, as indicated by a mean increase of .11 standard deviations in PHQ-4 scores per temporal progression of the volunteer mandate. This finding can be read as particularly relevant as it raises the question of confounding variables and factors negatively impacting volunteers' (resources to) commit to their work. In general, volunteering is associated with better mental health outcomes, including reduced mental distress and improved health-related quality of life, albeit this result pattern being more pronounced in older adults (Chan, Chui, Cheung, Lum, & Lu, 2021; Mak, Coulter, & Fancourt, 2022). Chan et al. (2021) additionally demonstrated protective effects of volunteering on mental health in times of crisis, their study having been published during the COVID-19 pandemic. There is observational evidence pointing towards beneficial effects of volunteering in part due to volunteers' personality characteristics: King, Jackson, Morrow-Howell, and Oltmanns (2015) found that individuals lower in neuroticism and higher in extraversion exhibited better physical function and mental health, while higher extraversion was related to better mental health outcomes; after controlling for personal characteristics, volunteering predicted neither physical or mental health anymore. Consequently, further research could assess (inter-)personal trait characteristics beyond attachment and alliance to gather a more nuanced picture of mental health outcomes, depending on volunteers' personalities. In addition, investigations of contextual and systemic factors (i.e. critical life events, time of year, time of academic year, overall workload, etc.) might serve to control for influences not related to volunteering itself.

4.2.5 Workshop, task, and training experiences. Pre-registered, forward stepwise multiple linear regression yielded preliminary evidence towards volunteer-rated participant interest and involvement, participant target groups of 15 to 18 years and adults, and volunteers' overall experience in delivering workshops to predict volunteer-rated overall workshop success. Future research might set out to match observer-ratings with participant data to investigate concurrences and deviations between facilitators' and participants' experiences, next to the need for employing validated scales to measure the extent of workshop interventions delivered by volunteers also affecting targeted, psychological outcomes, predominantly reductions in mental health related stigma, sterotypes of, and prejudices against mental disorders or people affected by mental disorders, respectively.

Exploratory stepwise regression yielded numerous variables to be potentially predictive of the number of workshops delivered by volunteers at the end of their mandate: Volunteers' overall workshop experience, perceived workshop success, perceived participant interest, satisfaction with trainings, tendency to recommend volunteering for the Mind the Mind campaign, but also overall volunteer satisfaction, motivation (as measured by VFI and VESD alike), public speaking anxiety, and feeling prepared to deliver workshops after having attended volunteer trainings. As the sum of delivered workshops was $k = 78$ at the

end of the data collection for all surveyed volunteers, but only N = 12 complete participant data sets were eligible for this exploratory analysis, this finding is to be interpreted with caution. From a volunteer-management, as well as organizationally impact-related perspective, however, it might be fruitful to test predictors of the number of delivered workshops in broader data bases, as predictors of this potential index of involvement might shed a light on factors contributing to strengthening manifest outcomes of campaign impact.

4.3 Strengths and limitations

The current longitudinal study examined effects of reminding volunteers of their initially stated motivation on organizational commitment, satisfaction, and intent to remain, as well as volunteers' further individual characteristics and psychological states. Due to non-negligible attrition (38.03% of the number of volunteers participating at T1 also completed the survey at T5), and due to an initially enrolled participant number falling below the pre-registered sample size, the current sample was not adequately powered to assess the confirmatory hypotheses regarding commitment, satisfaction, and intent to remain, as well as (pre-registered) exploratory (confirmatory) tests. Thus, the limited saturation of the present data base causes our inferential statistical tests to yield restricted informative values, pointing towards a necessity of future studies investigating more saturated data bases. Simultaneously, the present response and attrition rates are somewhat diagnostic themselves, as volunteer retainment (attrition, negatively framed) remains a prevalent and challenging phenomenon for organizations and volunteers alike (H.-L. Chen et al., 2020; Fernandes & Matos, 2023; Konieczny, 2018; Livi et al., 2020; Yanay & Yanay, 2008). As the participation in this scientifically independent study was on a voluntary basis, we cannot rule out self-selection effects in the sense that volunteers with a higher baseline in motivations are perhaps more inclined to commit to surveys on volunteering experiences that go beyond their core volunteer tasks. "The cat is biting its own tail here", as experiences of volunteers who opt out might be of especially high informative value to improve volunteer management processes, and thus pose a chance in strengthening volunteer retainment.

On a technical level, the unbalanced participant allocation to treatment vs. control conditions might explain some violations of statistical assumptions that were prerequisites to inferential statistical tests employed in the current study. This was due to the unsaturated data base, as the survey programme randomly assigned participants to conditions in an iterative way by sampling without replacement (i.e. not taking into account the previously achieved proportion of individuals in both the control and intervention group). A participation rate in the magnitude of the pre-registered sample size would have allowed for convergence toward balancing of conditional allocations.

Furthermore, it is unclear whether the current findings are generalizable to other volunteer groups. The sample consisting of Germany-wide, voluntarily engaged psychology (under-)graduate students, implies a high degree of specificity. On the other hand, circling back to EFPSA's (2021b) publicly available campaign data, future research could, by gathering volunteer data beyond Germany, draw on an unprecedentedly large data base, allowing for decisively shaping the research landscape on voluntary destigmatization work.

Most volunteer-related variables were examined using highly cited, literature-based, and previously validated questionnaires, lending multiple arguments in favor of construct validity to the present study, further underpinned by the excellent internal consistencies

and factorial model fits of questionnaires achieved in the current study population, even in cases they were adapted from their original version for item wordings to suit the sample at hand.

Tapping into the trend of mixed modeling (Boisgontier & Cheval, 2016) equipped the present study to take on possibly complex data structures that were, due to the small literature corpus on this specific field of investigation, not previously known. Mixed-effects modeling offers various advantages and strengthens statistical conclusion validity, by allowing the simultaneous estimation of between-subjects- and between-items-variability (Kumle et al., 2021), by enabling higher generalizability of results to non-estimated participant populations (Judd, Westfall, & Kenny, 2012, 2017), by reducing two analyses of variances (for participants, and stimuli) to one model with respective random effects (Judd et al., 2012), by increased robustness against missing values and the ability to simultaneously deal with categorical and continuous data (Baayen, Davidson, & Bates, 2008; Kumle et al., 2021), and by enabling higher power and lower type 1 error rates (Judd et al., 2012).

On an ecological level, it can be critically noted that there were no manipulation or attention checks implemented to test the internal validity of the treatment, and participants' degree of attention during data collection alike. However, due to the yoked-design nature, the present study might have addressed concerns regarding ecological validity, matching individuals with their own expressed motivations for assuming their roles as volunteers, perhaps creating highly self-relevant stimuli, and incentivizing an elaboration on motives, values, and core motivational facets as formulated in a qualitative way.

With all limitations, this study represents a precedent at the interface between volunteer research and applied campaign work to destigmatize mental disorders, and might also serve as preparatory work for future research in this field, including the expansion of research infrastructure for a field of research and application that is currently still barely developed, but at the same time seemingly highly relevant in socio-political terms of ameliorating mental health related stigma, drawing on valuable, multiplicatory volunteer work.

5 Conclusion

Sticking to the data at hand, the predominant conclusion of this study is to reject the hypotheses that reminding volunteers of their initially stated motivation elicits increases in volunteer satisfaction, commitment, and intent to remain. The findings also shed a light on volunteers' high value and self-determination orientations on initial motives for engaging in volunteer work, as well as pronounced fluctuations in volunteer satisfaction, commitment, and intent to remain. Importantly, volunteer public speaking anxiety decreased, but this improvement was accompanied by a worsening of mental health potentially attributable to external, volunteering-independent confounding factors of individuals' systemic ecologies and student volunteers' realities of life.

These results emphasize the complex interplay of factors influencing volunteer engagement, including the importance of perceived participant involvement and workshop experiences in predicting facilitators' ratings of campaign intervention success. The study's methodological limitations, including data saturation issues, point to the need for more robust, structurally and statistically sound investigations on voluntary destigmatization work. From an organizational perspective, enhancing volunteer retention and engagement will require ongoing attention to volunteer management in senses of training quality and or-

ganizational as well as collegial support systems, last not least to enhance volunteers' mental health upon task engagement during the management of individual life responsibilities unrelated to volunteer work. The findings also corroborate the broader sociopolitical need for sustained financial and structural incentives to promote long-term volunteer commitment, especially in volunteering work aiming at the destigmatization of mental disorders. Still, the presently established results might yield fruitful prospects on volunteers' potentially multiplicative effects in shaping positive societal changes by reducing mental health related stigma with its associated stereotypes and prejudices, based on ethically, value-oriented exertion of psychological knowledge.

6 Ethics statement

The study was approved by the ethics committee at the Human Sciences Faculty, University of Cologne. All participants gave written informed consent following the Declaration of Helsinki.

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9 Affidavit

Declaration of academic integrity for the present thesis submitted in part fulfilment of the regulations for the degree of Master of Science (M.Sc.) Psychology (research-oriented track).

Name, surname: Westerburg, Heiko Rajiv Garret

Matriculation number: 7350419

Title: "What makes you stay? Trajectories of volunteer-related experiences in an international campaign for the destigmatization of mental disorders"

I hereby declare in lieu of oath that I have completed this thesis independently and without the use of any aids other than those specified. All passages that have been taken verbatim or in spirit from other published and unpublished writings are identified as such. The work has not yet been submitted in the same or a similar form as part of another examination.

Cologne, 30th September 2024