

Building Movement Resilience: Structural and Psychological Aspects Associated with Environmental Activist Burnout

Resilienz in der Bewegung: Der Zusammenhang von strukturellen und psychologischen Aspekten mit Burnout im Umweltengagement

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Author statement

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Abstract

As the urgency of the climate crisis grows, increasing numbers of people are joining collective efforts to protect the environment. Yet, those dedicated to this cause often face numerous stressors that can accumulate to activist burnout. This article presents a quantitative examination of activist burnout among environmentally engaged individuals. Drawing on two cross-sectional studies ($N = 268$, $N = 483$), we show that more extensive involvement (measured by hours spent on engagement) and being paid for engagement were positively associated with activist burnout. In contrast, social identification and personal self-efficacy were negatively related to burnout. Our research further explored a range of other health-related variables, laying a foundation for this emerging field. We discuss our findings in the light of strategies for fostering resilience within environmental movements.

Keywords

environmental protection, activism, burnout, efficacy beliefs, social identification

Impact statement

We present two cross-sectional studies showing that pre-existing motivation for collective action could be leveraged for resilient engagement by fostering social identification and personal self-efficacy. Practically, groups could make volunteering enjoyable, build strong member connections, promote competence, develop long-term efficacy perspectives, and increase task autonomy. These measures could boost motivation as well as protect health. At the same time, we caution that an activist burnout dilemma may exist: long volunteer hours, strong feelings of injustice and partly participative efficacy are critical drivers of collective action but are also associated with activist burnout. Organizations could balance these motivations by limiting overload, institutionalizing self-care and offering emotional support. Such need-centered environments may help individuals to become resilient agents for socio-ecological transformation.

1 Introduction

Climate change poses an enormous threat to populations in vulnerable regions and, increasingly, wider parts of the globe (e.g., IPCC, 2023). This threat has fueled the rise of several protest movements, such as Fridays for Future, that demand a far-reaching socio-ecological transformation (Wallis & Loy, 2021; WBGU, 2011). As these groups experience the ebb and flow of social movements (Moyer, 1987), many people devote substantial time, effort, and emotion into these collective struggles. Such voluntary commitment is essential for movement continuity, yet it also exposes those engaged to numerous stressors that go beyond what is typically reported in the occupational domain: the work never seems to be finished, progress is perceived to be slow or ambiguous, the moral stakes feel existential, and negative emotions can become a daily companion (Chen & Gorski, 2015).

It therefore does not come as a surprise that environmental activists themselves identified burnout as a relevant research area for psychology in qualitative interviews (Hamann, Wenzel et al., 2025). For example, one interviewee stated: “In the climate movement, there is this ever-present feeling of urgency. We have to do this, (...), and if we don’t, we’re going to be completely fucked. But at the same time, you can’t keep running all the time. One question is: How do you balance the urgency with the fact that you are not going to be able to achieve change just like that?” (Hamann, Wenzel et al., 2025, p. 9). Activist burnout is an issue commonly reported in qualitative studies within domains such as animal rights, racial justice, and human rights (Chen & Gorski, 2015; Gorski et al., 2019; Rodgers, 2010). One study on trade union activism, for example, found that 48% of all activist participants reported burnout symptoms (Nandram & Klandermans, 1993). An interview study with college student activists reported that roughly 45% experienced physical or emotional symptoms consistent with burnout (Conner et al., 2023a).

Activist burnout should not be regarded as a mere personal problem, as it can potentially cause cascading effects within groups and movements. When a volunteer disengages, remaining group members may face an increased workload, risking burnout and attrition to spread further (Gorski et al., 2019). Often, groups are unprepared for such departures because burnout is rarely discussed openly (Rodgers, 2010). Departing members also take with them knowledge, skills, and wisdom about the historical developments and positions of the group (Gorski et al., 2019; Plyler, 2009). This disruptive potential (Gorski et al., 2019; Pigni, 2016) makes activist burnout a highly relevant topic for environmental psychologists.

Conceptually, *burnout* is a syndrome of prolonged work-related emotional and physical exhaustion, depersonalization, and decreased personal efficacy (Maslach & Jackson, 1981). Research on activist burnout applies this notion to the area of collective action (i.e., coordinated action that individuals undertake as group members with the purpose of achieving collective aims, Agostini & van Zomeren, 2021; Hamann et al., 2024; Wright et al., 1990). Building on this work and the APA’s (n.d.-a) definition of burnout, we define *activist burnout* as physical, emotional, and mental exhaustion from engagement in collective action groups.

Qualitative evidence underscores the multifaceted nature of activist burnout. For example, interviews with human rights activists reveal that such exhaustion can

manifest in physical symptoms (e.g., chronic insomnia, eating disorders, and migraines), psychological and emotional symptoms (e.g., chronic stress, anxiety, and depression), and motivational symptoms (e.g., hopelessness, despair, and perceived ineffectiveness, Chen & Gorski, 2015). Similar symptoms have also been reported among environmental activists (Einwohner, 2002; Frick et al., 2022; Nairn, 2019), including feelings of disconnection and numbness that align with the depersonalization dimension of burnout.

While in these examples, activism itself can be portrayed as the root cause of activist burnout, evidence suggests that volunteering and activism may be positively associated with life satisfaction and wellbeing (Binder & Blankenberg, 2016; Hope et al., 2018; Vestergren & Drury, 2021; see also Vestergren et al., 2017, 2019). For example, one study found that environmental activism can buffer adverse mental health effects of climate anxiety (Schwartz et al., 2023, see also Hope et al., 2018). Moreover, many engaged individuals do not want to leave but rather seek resilience against the stressors inherent in collective action (Hamann, Wenzel et al., 2025). In line with the concept of resilience, they search for ways to effectively adapt to challenges connected to collective action, which might otherwise lead to burnout (see APA, n.d.-b).

The present article therefore addresses the following research question: Which variables are associated with activist burnout? In order to learn about resilient forms of collective action, we particularly focus on psychological variables commonly known to predict collective action. Prior work has examined the relationship between environmental activism and wellbeing (see Vestergren & Drury, 2021), explored related concepts in general population samples (e.g., climate burnout, Bird et al., 2024; eco-depression, Stanley et al., 2021), and documented activists' burnout experiences via interviews (Gorski et al., 2019). We extend this emerging field by thoroughly investigating the correlates of environmental activist burnout using a quantitative approach.

2 Theory

In conducting this research, we were confronted with two distinct bodies of literature: a small body of literature on activist burnout, mainly comprised of qualitative studies from non-environmental fields, and an immense research body on work-related burnout. To derive our hypotheses, we chose to build on a quantitative study that most closely resembled our research context: Hamann and colleagues (2021), who explored burnout among environmental volunteers at higher education institutions in Germany. In addition, we aimed to include variables uniquely relevant to activist burnout, a context in which both voluntary and paid forms of engagement can coexist. Research from the organizational domain further served to validate our theoretical assumptions. To organize the identified burnout correlates, we adopted Chen and Gorski's (2015) distinction between structural aspects (i.e., group and engagement characteristics) and psychological aspects (i.e., beliefs, emotions and motivations).

2.1 Structural aspects linked to activist burnout

A central structural variable associated with burnout is the *extent of engagement*. In their study, Hamann and colleagues (2021) found that volunteering time correlated moderately to strongly with activist burnout. Supporting this pattern, Moreno-Jiménez and Villodres (2010) reported that social work volunteers who engaged for more hours also exhibited higher burnout levels. A likely mechanism is a poor work-life balance (Frick et al., 2022; Peterson et al., 2023). Volunteers who invest substantial time to the cause may lack leisure and time with family and friends, which they would need to physically and emotionally recover from their engagement. An interviewee describes this situation as follows: “I notice that I have days when I see very little of the outside world. Where I often think that I feel really unhealthy in my body and in my head in such hot phases of projects.” (Hamann, Wenzel et al., 2025, p. 9). Meta-analytical evidence from the organizational domain supports the association between higher workload and burnout (Aronsson et al., 2017; Bowling et al., 2015).

Unlike many occupational settings, socio-ecological groups often have both paid and unpaid members, as well as members who are committed to multiple organizations versus those who focus on a single group. Thus, two additional structural variables may be particularly relevant with regard to activist burnout: whether individuals are paid for (part of) their engagement and the number of initiatives they are involved in. Scholars found higher burnout scores among *paid* workers than among voluntary workers in the same field (Vecina et al., 2001, as cited in Moreno-Jiménez & Villodres, 2010). Paid employees might be viewed as “workhorses” (Rodgers, 2010, p. 278) carrying a greater overall workload, taking responsibility for straining administrative work, and facing institutional expectations (e.g., regarding project success or with respect to maintaining a professional composure in emotionally demanding situations). Driven by feelings of guilt, they may also pressure themselves to match or exceed the work of other group members who are not paid for their work.

Involvement in more than one initiative was positively associated with burnout among AIDS volunteers (Chacón Fuertes & Vecina Jiménez, 1999). Similar to juggling multiple jobs, participation in several initiatives may increase mental load and make an individual’s schedule more complex. Moreover, a person that is involved in numerous initiatives may lack the ability to say “no”, which may also relate to burnout (see Gorski et al., 2019).

2.2 Psychological aspects linked to activist burnout

Beyond structural aspects, psychological variables typically investigated as antecedents of environmental collective action (see Hamann, Dasch, & von Agris, 2025) also appear central to understanding activist burnout. Hamann and colleagues (2021) found that greater aim-focused *personal* and *collective self-efficacy* (i.e., an individual’s belief that they as an individual and as an environmental group can promote environmental protection) were related to lower self-reported burnout. The critical role of efficacy beliefs becomes evident when considering that common burnout frameworks classify diminished self-efficacy as a core symptom

of burnout (e.g., Chen & Gorski, 2015; Maslach & Jackson, 1981). It is possible that exhaustive activist tasks such as having repetitive conversations (Gorski, 2019) and facing public apathy (Gomes, 1992) are more endurable if one holds strong self-efficacy beliefs. Empirical studies on activist burnout (Einwohner et al., 2002; Moreno-Jiménez & Villodres, 2010) and meta-analyses on teacher and healthcare professional burnout (Park & Shin, 2020; Shoji et al., 2016) underscore the relevance of self-efficacy as a potential protective factor against burnout. Although work-related collective efficacy has been examined less systematically, research on teachers and nurses shows medium to strong negative correlations between collective efficacy and burnout (Capone et al., 2019; Kiefer et al., 2025).

Yet, analyses by Hamann et al. (2021) indicate that activist burnout may also be positively related to one specific type of efficacy: *participative efficacy*, an individual's belief that their contribution is essential to their group's success (van Zomeren et al., 2013). Members of collective action groups who experience burnout often pressure themselves to make a significant contribution to the cause (Driscoll, 2020; Pines, 1993) and feel a strong personal responsibility for their group's effectiveness (Chen & Gorski, 2015; Nairn, 2019; Rodgers, 2010). When an individual believes that, without them, the group may fail, this may lead them to pursue an unhealthy amount of engagement, thus contributing to burnout.

Next to efficacy beliefs, identification variables also warrant exploration in the context of activist burnout. While Hamann and colleagues (2021) observed only a weak negative association between *social identification* and activist burnout, other research offers a stronger case. For instance, Molina and colleagues (2017) found that HIV/AIDS volunteers experiencing a greater sense of community had a lower risk for burnout. Furthermore, interview studies suggest that identity-building strategies may help overcome activist burnout (Nairn, 2019; Nepstad, 2004). Conversely, conditions that undermine social identification, such as interpersonal tensions, hostility, infighting, and bullying, have been associated with activist burnout (Chen & Gorski, 2015; Gomes, 1992; Gorski et al., 2019).

In the environmental domain, self-defining as an environmentalist (i.e., *environmental self-identity*, van der Werff et al., 2013) may constitute a form of identification particularly relevant for protecting against burnout. Environmental self-identity may link individuals to a broader, more agentic collective of environmentalists and to nature itself, which has been proposed as an important resource for reducing burnout (Maslach & Leiter, 2010). Given the strong meta-analytical evidence from organizational psychology that speaks of the relevance of social identification in preventing burnout (Steffens et al., 2017), it seems worthwhile to explore social identification and environmental self-identity as exploratory variables.

In sum, although investigations of activist burnout remain limited, converging quantitative and qualitative evidence points to an initial set of structural and psychological aspects associated with burnout. Several of these variables received systematic support from research on burnout in non-activist areas. Notably, collective action models typically assume a direct path from social identity to collective action, and an indirect path via efficacy beliefs (Agostini & van Zomeren, 2021; Hamann et al., 2021). Yet, it remains open how activist burnout integrates into these models.

3 Study 1

We hypothesize the following structural aspects to be positively associated with activist burnout: weekly volunteering hours (H1a), being paid for one's involvement (H1b), and participation in a larger number of environmental initiatives (H1c). Regarding psychological aspects, we expect that self-efficacy (H2a) and collective efficacy (H2b) are negatively related to activist burnout, while participative efficacy is positively related to it (H2c). Therein, volunteering hours, being paid, collective and participative efficacy pertained to individuals' main environmental initiative. We explore social identification with the main initiative and environmental self-identity as additional explanatory variables. Moreover, we examine positive and negative affect as complementary indicators of wellbeing to assess whether the associations with burnout would replicate when using affective measures not specific to volunteering.

3.1 Methods

3.1.1 Sample characteristics

The current study was part of an extra-survey appended to Wave 2 of a four-wave online panel survey conducted in 2019 (Hamann, Prestele et al., 2025). The Wave-1 questionnaire was distributed in German and English via mailing lists, Facebook groups, and survey-exchange platforms, with a particular focus on environmental groups and channels. This approach yielded an initial sample of $N = 1,242$ (Wave 2: $N = 892$). Participants who completed all four waves could win vouchers and receive course credit. Because the present study focused on burnout among environmentally engaged individuals, we restricted the sample to respondents reporting active engagement in an environmental initiative (> 0 hours/week). This resulted in a total sample of $N = 268$, all of which were German-speaking participants (181 female, $M_{\text{age}} = 34.38$, $SD_{\text{age}} = 13.24$). See Supplements A1-3 for a detailed sample description.

3.1.2 Procedure and measures

We collected data using SoSci Survey (Leiner, 2014). Data collection followed APA guidelines for the ethical conduct of research and included informed consent. In the main questionnaire, participants read the study definition of active engagement in an environmental initiative (e.g., environmental advocacy, conservation volunteering) and responded via a yes/no question (see Supplement A4). As this study was embedded in a larger investigation, some measures related directly to the present study (e.g., self-efficacy) while others did not (e.g., private behavior). This main questionnaire received approval from the ethics committee of the University of Koblenz-Landau. After completing the main questionnaire, participants were invited to spend an additional 3–5 minutes on an ancillary survey. This included a measure of activist burnout, among other items. Unless noted otherwise, all items used a 7-point Likert scale (1 = *completely disagree* to 7 = *completely agree*). We present measures below in the order administered (see Supplement A19/20 for all items).

PANAS. At the beginning of the questionnaire, participants completed an adaptation of the Positive and Negative Affect Schedule (PANAS; Breyer & Bluemke, 2016). Ten items assessed momentary *positive affect* (e.g., “At the moment, I feel optimistic”, $\alpha = .93$), and three items captured *negative affect* (“At the moment, I feel scared/angry/guilty”, $\alpha = .71$).

Structural variables. Participants indicated the *number of initiatives* in which they were currently active. Moreover, they reported how many hours they were *voluntarily engaged* and how many hours they were *paid for their engagement* in their main initiative by an open quantitative indication. The latter variable was dichotomized to compare participants who were paid at least partly for their engagement to those that weren't. Voluntary and paid hours were summarized to form a total *engagement hours* measure.

Psychological variables. We assessed *social identification* (e.g., “I feel like I belong to my environmental initiative”, $\alpha = .81$, Cameron, 2004) and *environmental self-identity* (e.g., “I see myself as an environmentally friendly person”, $\alpha = .83$, Werff et al., 2013) with three items each. We measured three forms of agent-aim efficacy beliefs (Hamann et al., 2024) with three items each that were based on van Zomeren et al. (2013): *personal self-efficacy* (e.g., “I believe that I as an individual can advance environmental protection”, $\alpha = .85$), *collective efficacy* with respect to one's environmental initiative (e.g., “I believe that through joint actions, we as an environmental initiative can contribute to a solution of the environmental crisis”, $\alpha = .82$), and *participative efficacy* (e.g., “I believe that I make a significant contribution to my environmental initiative in order to jointly advance environmental protection”, $\alpha = .84$).

Activist burnout. We operationalized *activist burnout* with a self-generated two-item burnout scale based on Einwohner (2002): (1) “I feel burnt out by my environmental (volunteer) work”, (2) “My environmental (volunteer) work brings me close to a burnout” ($r = .75$).

As demographic measures, we assessed age, gender, net income, highest educational degree, and average weekly hours spent on wage labor.

3.1.3 Data preparation and analyses

We performed data analysis using R Statistics version 4.5.1 and data management using SPSS 30. Hypotheses were evaluated using two multiple linear regression models: the first model included structural variables, and the second model tested psychological variables. We chose to model structural and psychological aspects separately, as our main interest lay in exploring the psychological mechanisms underlying activist burnout, with an eye toward developing future causal models based on our findings. Hamaker et al. (2020) emphasize the importance of distinguishing specific research aims (description, prediction, explanation) and variable types (dynamic, stable, time-invariant). While incorporating a broad array of variable types may be a suitable strategy to maximize prediction, it does not necessarily advance our understanding of the causal and dynamic processes leading to an outcome. In this study, stable structural variables (e.g., being paid for engagement, number of initiatives) could therefore constitute potential confounders that may

affect both psychological variables and outcomes, thereby obscuring their association (see also Wysocki et al., 2022). For instance, being paid for engagement could foster participative efficacy by affording individuals a more significant organizational role, and may also exert a distinct influence on burnout. This dual association could mask the genuine relationship between participative efficacy and burnout.

Accordingly, Model 1 only included structural variables. Model 2 included psychological variables and controlled for total engagement hours – a dynamic, potential mediating mechanism. Without controlling for it, we would possibly have found the same variables associated with collective action to be associated with activist burnout. Yet, to gain insight into the characteristics of resilient engagement, we were interested in the association with psychological variables irrespective of individuals' engagement level.

Because residual distributions deviated from normality, we inspected multivariate outliers using Cook's distance. Applying a conservative cut-off value of 1, no influential cases were detected and all cases were retained. As a robustness check, we repeated analyses with robust linear regression and obtained the same pattern of results. Moreover, we repeated all analyses applying a stricter Cook's distance threshold of $4/N$, leading to an exclusion of 20 outlier participants in H1, 17 participants in H2, and 14 participants in exploratory analyses. We report where results diverge. Multicollinearity was assessed via variance inflation factors (VIFs), which remained below 5 in all analyses (James et al., 2013, pp. 101–102). Table 1 gives an overview of correlations between main variables.

3.2 Results

3.2.1 Hypotheses

As expected in H1a and H1b, weekly volunteering hours ($\beta = 0.23, p < .001$) and being paid for one's engagement ($\beta = 0.28, p < .001$) were positively related to activist burnout (see Table 2). Contrary to H1c, involvement in a larger number of initiatives did not explain activist burnout ($\beta = 0.05, p = .418$). Of the psychological variables, only personal self-efficacy was negatively related to activist burnout ($\beta = -0.23, p = .003$), supporting H2a. Collective efficacy ($\beta = -0.02, p = .826$) and participative efficacy ($\beta = 0.06, p = .497$) were non-significant in the primary analyses, thus opposing H2b/c. These findings remained robust after testing psychological and structural aspects simultaneously (see Supplement A7) and when controlling for demographic variables (age, gender, income, education, and working hours), with none of these covariates reaching significance (all $ps > .05$). Notably, when excluding 17 outliers based on a stricter Cook's distance exclusion criterion, collective efficacy ($\beta = -0.20, p = .033$) and participative efficacy ($\beta = 0.22, p = .022$) became significant in the hypothesized directions.

3.2.2 Exploratory analyses

First, we examined additional variables from collective action research. Social identification with the initiative was negatively associated with activist burnout ($\beta = -0.23, p < .001$), whereas environmental self-identity was not ($\beta = 0.01, p = .905$, see Table 2). Overall, this model explained 20% of the variance in activist burnout,

$F(6, 261) = 11.09, p < .001$. Second, we explored positive and negative affect as complementary indicators of wellbeing that were not specific to volunteering (see Supplement A9). Reflecting burnout findings, personal self-efficacy was positively related to positive affect ($\beta = 0.24, p = .003$), and social identification showed negative associations with negative affect ($\beta = -0.14, p = .029$). All other variables were non-significant ($ps > .05$).

Table 1

Bivariate correlations of main variables (Study 1)

	<i>M (SD)</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Burnout	2.51 (1.42)									
2. Engagement (total)	7.19 (11.20)	.34***								
3. Engagement (vol)	4.54 (8.13)	.24***	.70***							
4. Engagement (pay)	0.18 (0.39)	.29***	.51***	.01						
5. Initiative numbers	1.68 (1.12)	.12*	.18**	.17**	.14*					
6. Pers. self-efficacy	5.17 (1.23)	-.19**	.03	.08	-.04	.09				
7. Collective efficacy	5.41 (1.01)	-.10	.03	.07	.00	.15*	.60***			
8. Participative efficacy	4.97 (1.14)	-.08	.05	.09	.02	.18**	.65***	.76***		
9. ID initiative	5.80 (0.91)	-.21***	.09	.11	.00	.01	.21***	.30***	.33***	
10. Env. self-identity	5.98 (0.81)	-.04	.13*	.08	.08	.15*	.36***	.34***	.36***	.24***

Note. Engagement (vol) = voluntary engagement, Engagement (pay) = paid engagement dichotomized, Pers. self-efficacy = personal self-efficacy, ID initiative = identification with the initiative, Env. self-identity = environmental self-identity, * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2
Linear regression models explaining activist burnout (Study 1)

	Model 1: Structural variables				Model 2: Psychological variables (hypotheses)				Model 3: Psychological variables (explorations)			
	B	SE	β (95%-CI)	p	B	SE	β (95%-CI)	p	B	SE	β (95%-CI)	p
(Intercept)	2.04	0.15		<.001	3.33	0.45		<.001	4.84	0.72		<.001
Engagement (vol)	0.04	0.01	0.23 (0.11, 0.34)	<.001								
Engagement (pay)	1.03	0.21	0.28 (0.17, 0.39)	<.001								
Initiative numbers	0.06	0.07	0.05 (-0.07, 0.16)	.418								
Engagement (total)					0.04	0.01	0.34 (0.23, 0.45)	<.001	0.05	0.01	0.36 (0.25, 0.47)	<.001
Pers. self-efficacy					-0.27	0.09	-0.23 (-0.38, -0.08)	.003	-0.28	0.09	-0.24 (-0.39, -0.09)	.002
Collective efficacy					-0.03	0.12	-0.02 (-0.19, 0.15)	.826	0.01	0.12	0.01 (-0.16, 0.18)	.913
Participative efficacy					0.08	0.12	0.06 (-0.12, 0.25)	.497	0.15	0.12	0.12 (-0.06, 0.30)	.188
ID initiative									-0.37	0.09	-0.23 (-0.35, -0.12)	<.001
Env. self-identity									0.01	0.11	0.01 (-0.11, 0.13)	.905
				$R^2 = .141$	$R^2 = .156$				$R^2 = .203$			
				$F(3, 264) = 14.47^{**}$	$F(4, 263) = 12.11^{***}$				$F(6, 261) = 11.09^{***}$			

3.3 Discussion of Study 1

Study 1 provided partial support for our hypotheses. Consistent with H1a/b and H2a, activist burnout was related positively to the number of voluntary hours devoted to an initiative and being paid for one's engagement, and negatively to self-efficacy. Contrary to our expectations, being involved in more initiatives was not associated with burnout when considering other central variables. In our main analyses, neither collective nor participative efficacy explained activist burnout. Nevertheless, robustness checks using a subsample with stricter exclusion criteria showed the expected pattern of a negative (collective efficacy) and positive (participative efficacy) relationship. This discrepancy warrants further investigation of efficacy-related constructs.

4 Study 2

Study 1 confirmed several explanatory variables of activist burnout, identified in prior qualitative and quantitative research. Study 2 sought to replicate and extend these findings by examining two additional concepts discussed in qualitative studies on activist burnout (Chen & Gorski, 2015; Gorski et al., 2019): descriptive norms and integrated motivation.

Descriptive norms represent an individual's perception of what other people typically do (Cialdini et al., 1990). While they are well-established predictors of private pro-environmental behavior (Bergquist et al., 2019; Hamann et al., 2015) and environmental collective action (Bamberg et al., 2018; Fritzsche et al., 2018; Hamann, Dasch, & von Agris, 2025), their potential role in contributing to activist burnout has received little attention. However, interview studies indicate that involvement among peers can exert pressure on engaged individuals to increase their own involvement beyond their physical and emotional limits. As one interviewee put it: "if your friend is like, 'hey... do you want to do extra leafletting or something with me?' then it doesn't just feel like you're saying no to the cause, you're also saying no to one of your friends" (Gorski et al., 2019, p. 372). Thus, being embedded in active social movement networks may increase the risk of burnout (Chen & Gorski, 2015; Gorski et al., 2019), particularly when these group members are also regarded as friends.

In a qualitative study of animal rights activists, deep emotional connection and personal attachment to the cause were frequently cited as another source of burnout (Gorski et al., 2019). *Integrated motivation* captures this phenomenon by assessing the extent to which individuals perceive their activism as rooted in personal meaning, purpose, and values (Sheldon et al., 2016). Originally conceptualized within self-determination theory (Deci & Ryan, 2000), integrated motivation has been identified as relevant in explaining environmental volunteerism (Sheldon et al., 2016). Including integrated motivation enables us to clarify the potential risks that may accompany this essential source of motivation.

In addition to these theoretical extensions, Study 2 allowed us to refine and broaden our methodological approach. First, we improved our self-generated 2-item measurement of activist burnout from Study 1. The first item captured the experience of burnout as it is commonly operationalized ("I feel burnt out by my

environmental (volunteer) work”), using the colloquial German equivalent of “burned out” rather than a technical term. The second item assessed self-categorization with respect to burnout by asking “My environmental (volunteer) work brings me close to a burnout”, using the technical term. Notably, the response to this item could have been influenced by participants’ prior knowledge about the concept of burnout and its symptoms. To improve measurement, we adapted the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) in Study 2, the most widely used burnout assessment, to the activist domain. The MBI proposes a three-factor structure that roughly matches the aspects typically reported for activist burnout (e.g., Chen & Gorski, 2015): emotional exhaustion, depersonalization, and (struggles with) personal accomplishment.

Second, we aimed to test the stability of our findings across different identities. Study 1 centered on identification with participants’ main environmental initiative. We evaluated our open comment section and some participants noted that they were not necessarily active in one main initiative but rather engaged in many loose networks. Moreover, we received verbal feedback by a participant who suggested that their main initiative played a relatively minor role in their motivation and potential burnout compared to broader identities. For identity processes to unfold their power, it is crucial to target identities relevant to an individual (Fritzsche et al., 2018). Accordingly, we chose the broader socio-ecological movement as an identity reference group in Study 2. Third, Study 2 provided the opportunity to include additional indicators of wellbeing (such as satisfaction with life and subjective vitality) and explore a wider range of psychological variables (from the dual chamber model of collective action, volunteer motivation, and psychological need satisfaction, Agostini & van Zomeren, 2021; Chen et al., 2015; Millette & Gagné, 2008), thus laying a foundation for future research to build upon.

Guided by Study 1, we hypothesize that weekly volunteering hours (H1a) and being paid for one’s involvement (H1b) are positively associated with activist burnout. We further expect that identification with the socio-ecological movement (H2a) and personal self-efficacy (H2b) are negatively related to activist burnout. Hypotheses of H3 are built on prior literature and sensitivity analyses using a stricter Cook’s-distance exclusion. We assume activist burnout to be negatively linked to collective efficacy (H3a) and positively linked to participative efficacy (H3b). Additionally, we expect descriptive norms of friends (H3c) and the movement (H3d) as well as integrated volunteer motivation (H3e) to be positively associated with burnout. Finally, we explore additional explanatory variables that have been associated with engagement in collective action in previous research (e.g., Bamberg et al., 2018; Wallis & Loy, 2021; Wullenkord, 2023): affective injustice, moral convictions, injunctive norms, descriptive norms of the family, other forms of volunteer motivation, and psychological need satisfaction/frustration.

4.1 Methods

4.1.1 Sample characteristics

We recruited individuals who self-described as actively engaged in the movement for a socio-ecological transformation. Over a four-week period in June 2021, we

collected data internationally via SoSci survey (Leiner, 2020), distributing the survey through mailing lists, websites, and personal contacts, focusing on environmental groups and channels. The final sample comprised 483 German-speaking participants (324 female, $M_{age} = 37.82$, $SD_{age} = 14.20$, see Supplements A10/11 for detailed descriptions).

4.1.2 Procedure and measures

After providing informed consent, participants indicated (yes/no) whether they met the study's definition of a person actively engaged in the socio-ecological movement.¹ Data collection followed APA guidelines for the ethical conduct of research. Unless noted otherwise, items were rated on a 7-point Likert scale ranging from 1 (*completely disagree/not at all true/never applies*) to 7 (*completely agree/completely true/always applies*). The survey contained measures in the following order (see Supplement A21/22 for all items).

Psychological variables. Reflecting Study 1, three items measured *social identification* with the movement for a socio-ecological transformation, and we added a fourth item for perceived involvement following Feitosa et al. (2012, "I feel involved in what is happening in the movement", $\alpha = .83$). We assessed evaluations of *affective injustice* with three items ("When thinking about what the government and economy currently do to stop socio-ecological crises, I feel outrage/rage/anger", $\alpha = .80$, Bamberg et al., 2015). To measure aim-focused efficacy beliefs with three items each, we used similar measures as in Study 1, adapted to the new reference group of the socio-ecological movement: *self-efficacy* (e.g., "I believe that I as an individual can advance a socio-ecological transformation", $\alpha = .84$), *collective efficacy* (e.g., "I believe that through joint actions, we as a movement can contribute to a solution of socio-ecological crises", $\alpha = .86$), and *participative efficacy* (e.g., "I believe that I make a meaningful contribution to the movement in order to jointly advance the socio-ecological transformation", $\alpha = .88$). Three items measured *moral convictions* (e.g., "My opinion about socio-ecological topics is a universal moral value that should apply at all times", $\alpha = .75$, van Zomeren et al., 2019). Following Rees and Bamberg (2014), one item each assessed *descriptive norms* with regard to other movement members, friends, or family (e.g., "My friends actively engage in the socio-ecological movement"). We also explored a sum-score of *injunctive norms* for the same three reference groups (e.g., "My friends insist that I actively engage in the socio-ecological movement", $\alpha = .82$).

We measured volunteer motivation with three-item subscales (adapted from Clary et al., 1998; Millette & Gagné, 2008): *intrinsic motivation* (e.g., "My engagement

¹ Participants read the following statement and indicated whether it applied to them: „Active engagement in the movement for a socio-ecological transformation can include many things in our understanding: It can be engagement in local or global environmental groups, NGOs, or political parties, as well as volunteer work in a nature protection project or the participation or organization of demonstrations, occupations, or educational events which deal with socio-ecological issues. It can also include active engagement which deals with the social impacts of environmental crises like climate-induced migration or environmental racism. If paid work feels like such a kind of active engagement, it also counts as ‘active engagement for a socio-ecological transformation’. In this understanding, passive membership in a group would not qualify as part of active engagement.“

is fun”, $\alpha = .84$), *integrated motivation* (e.g., “My engagement is a fundamental part of who I am”, $\alpha = .72$), *career motivation* (e.g., “My engagement allows me to explore different job options.”, $\alpha = .82$), and *understanding motivation* (e.g., “My engagement allows me to gain a new perspective on things”, $\alpha = .67$). Exploratory factor analysis and reliability checks prompted us to combine *protective and enhancement motivation* into a single scale (e.g., “My engagement makes me feel needed”, $\alpha = .72$). Furthermore, we adapted a twelve-item measure of psychological need satisfaction and frustration from Chen et al. (2015). It comprised subscales with two items each measuring *autonomy satisfaction* (e.g., “I feel in my engagement for a socio-ecological transformation, I have been doing what really interests me”, $r = .50$) and *autonomy frustration* (e.g., “I feel forced to do many things in my engagement I wouldn’t choose to do”, $r = .38$). As autonomy frustration showed borderline reliability, we interpret that result cautiously. Exploratory factor analysis supported merging *relatedness satisfaction* (e.g., “I feel that the people I care about in the movement also care about me”, $\alpha = .74$) and *competence satisfaction* (e.g., “I feel competent to achieve my goals in my engagement”, $\alpha = .77$) into four-item measures each.

Structural variables. We measured engagement hours by asking participants to report their average weekly hours of involvement in the socio-ecological movement over the past year. Other than in Study 1, however, participants were asked to indicate the percentage of their engagement that was voluntary versus paid (e.g., “Of the hours mentioned in Question 1, what percentage of your engagement last year was *voluntary* and what percentage was *paid*?” Voluntary: X%, Paid: X%). For 19 participants, the two percentages did not add up to 100%. For twelve participants where the combined percentage fell below 85%, we treated these as invalid responses and missing values. For the remaining seven participants, we rounded them to total 100%. From participants’ responses, we derived three variables: hours of *voluntary engagement*, *paid engagement* (again dichotomized), and total weekly *engagement hours*. Participants then reported how long they had been involved in the movement (years and months).

Wellbeing indicators. We assessed *satisfaction with life* with the well-established 5-item scale (e.g., “In most ways my life is close to my ideal”, $\alpha = .85$, Diener et al., 1985; Schumacher, 2003). We measured *positive and negative affect* regarding participants’ engagement in the socio-ecological movement over the last year using the validated 10-item version of the I-PANAS-SF (e.g., “Using these words, please indicate how you felt over the last year regarding your engagement for a socio-ecological transformation: Inspired”, from 1 (*not at all*) to 5 (*extremely*), $\alpha_{\text{pos}} = .82$, $\alpha_{\text{neg}} = .71$, Thompson, 2007). Five items measured *subjective vitality* (e.g., “I feel alive and vital”, $\alpha = .87$, Bostic et al., 2000).

Activist burnout. To assess *activist burnout*, we adapted the MBI (Maslach & Jackson, 1981) and contextualized the original 22 items to engagement in the socio-ecological movement. Both the originally proposed three-factor model (CFI = .83, RMSEA = .06) and an alternative two-factor model (CFI = .85, RMSEA = .06) showed poor fit to our data, which aligns with commonly reported problems for the MBI (Shoman et al., 2021). *Emotional exhaustion* as the central burnout dimension (Maslach & Jackson, 1981) therefore served as our primary outcome and

we examined the remaining dimensions in exploratory analyses. Keeping the originally proposed item-scale allocations, nine items assessed *emotional exhaustion* (e.g., “I feel worn out at the end of a day full of engagement”, $\alpha = .84$). We measured the *depersonalization* dimension using five items (e.g., “I have become more callous to people since I have started doing this engagement.”, $\alpha = .69$). Another eight items assessed the *personal accomplishment* dimension (e.g., “I deal with other people’s problems successfully.”, reverse-coded to reflect lack of accomplishment, $\alpha = .74$). Notably, items were rated on a 7-point scale from “never applies” to “always applies” rather than from “never” to “every day” (Maslach & Jackson, 1981), because, unlike workplace settings, participants might not engage in activism on a daily basis, and we wanted to avoid conflating our burnout measure with the engagement extent.

As demographic measures, we assessed age, gender, amount of money at monthly disposal, highest educational degree, average weekly hours spent on wage labor, and place of residence. At the end of the survey, participants could choose to participate in a lottery for a sustainable voucher or for making a donation.

4.1.3 Data preparation and analyses

We analyzed the data with R (version 4.5.1) and managed datasets in SPSS 30. A total of 573 participants met the inclusion criterion of reporting more than zero hours per month of engagement in the socio-ecological movement. First, we excluded 21 participants who failed our attention check and one participant for an overly consistent, rapid response pattern. We removed another eight participants who reported implausible weekly volunteering hours (250 to 12345). This yielded a sample of $N = 543$ participants. As only 57 (10.5%) respondents completed the English questionnaire, we restricted the main analyses to the German sample ($N = 486$). Finally, we excluded three participants who did not complete our main dependent variable (i.e., activist burnout), resulting in the final sample of $N = 483$ participants.

Following Study 1, we tested hypotheses with multiple linear regression models: Model 1 included structural variables, Model 2 included significant psychological variables from Study 1, and Model 3 added the remaining hypothesized variables. We screened for multivariate outliers using Cook’s distance and found no influential cases with the conservative cutoff (> 1). To check for robustness, we reran all analyses using a stricter Cook’s distance threshold of $4/N$, which led to an exclusion of $n = 19$ outlier participants in H1 and H2, and $n = 22$ participants in H3. We report divergent results. We evaluated multicollinearity with variance inflation factors (VIFs), which remained below 5 in all models (James et al., 2013, pp. 101–102). See Table 3 for the main bivariate correlations.

4.2 Results

4.2.1 Hypotheses

In disagreement with H1a, voluntary engagement did not explain emotional exhaustion ($\beta = 0.07, p = .122$). However, as predicted in H1b, being paid for one’s involvement did ($\beta = 0.14, p = .003$, see Table 4). When we combined voluntary

and paid engagement into total weekly hours in the following analysis, total engagement hours were associated with emotional exhaustion ($\beta = 0.11, p = .014$). Replicating results of Study 1 and supporting H2a/b, identification with the socio-ecological movement ($\beta = -0.17, p < .001$) and personal self-efficacy ($\beta = -0.11, p = .024$) were negatively related to emotional exhaustion. These results remained robust even after controlling for demographic variables (age, gender, income, education, and working hours).

Contrary to H3a-e, none of the following variables were associated with emotional exhaustion: collective efficacy ($\beta = 0.06, p = .335$), participative efficacy ($\beta = -0.04, p = .547$), descriptive norms of friends ($\beta = 0.07, p = .159$), descriptive norms of the movement ($\beta = 0.05, p = .249$), and integrated volunteer motivation ($\beta = -0.01, p = .875$). However, when excluding 22 outliers based on a stricter Cook's distance exclusion criterion, descriptive norms of the socio-ecological movement were positively linked to emotional exhaustion ($\beta = 0.11, p = .026$), which is in line with H3d. Notably, when testing structural and psychological aspects simultaneously, personal self-efficacy lost its significance (see Supplement A15).

4.2.2 Exploratory analyses

First, we added further variables to explain emotional exhaustion, which substantially increased the amount of explained variance (Model 4: $F(20, 462) = 15.44, p < .001, R^2 = .401$, see Table 4). This increase was mainly driven by affective injustice ($\beta = 0.19, p < .001$), career motivation ($\beta = 0.14, p = .001$), and autonomy need frustration ($\beta = 0.18, p < .001$) positively relating to emotional exhaustion, and intrinsic volunteer motivation ($\beta = -0.24, p < .001$) and competence need satisfaction ($\beta = -0.27, p < .001$) negatively relating to it.

Second, we applied Model 3 to other burnout dimensions (see Supplement A17). As with emotional exhaustion, total engagement hours were positively linked to depersonalization ($\beta = 0.01, p = .024$), and movement identification was negatively associated with depersonalization ($\beta = -0.18, p = .001$) and lack of personal accomplishment ($\beta = -0.22, p < .001$). However, self-efficacy did not explain other burnout dimensions (depersonalization: $\beta = -0.09, p = .139$; personal accomplishment: $\beta = 0.00, p = .990$). Instead, integrated volunteer motivation showed negative relations with both depersonalization ($\beta = -0.17, p = .001$) and lack of personal accomplishment ($\beta = -0.20, p < .001$). Interestingly, participative efficacy showed positive associations with depersonalization ($\beta = 0.16, p = .008$) and negative ones with lack of personal accomplishment ($\beta = -0.19, p = .001$).

Third, we reran Model 3 for other wellbeing outcomes (see Supplement A18). Again, movement identification was the single most robust explanatory variable across outcomes: positive affect ($\beta = 0.17, p = .001$), negative affect ($\beta = -0.19, p < .001$), satisfaction with life ($\beta = 0.24, p < .001$), and subjective vitality ($\beta = 0.14, p = .006$). For positive affect specifically, total engagement hours ($\beta = 0.13, p = .002$), participative efficacy ($\beta = 0.12, p = .041$), and integrated motivation ($\beta = 0.20, p < .001$) showed additional positive relations (all other $ps > .05$).

Table 3

Bivariate correlations of main variables (Study 2)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
1. Burnout (exhaustion)	<i>M</i> (<i>SD</i>)	2.79 (0.89)																				
2. Engagement (total)		.09 [*]	12.52 (13.83)																			
3. Engagement (vol)		.07	.70 ^{***}																			
4. Engagement (pay)		.14 ^{**}	.46 ^{***}	.01																		
5. ID movement		-.20 ^{***}	.07	.12 [*]	-.03																	
6. Affective injustice		.18 ^{***}	.00	.11 [*]	-.13 ^{**}	.18 ^{***}																
7. Moral convictions		-.02	-.00	.04	-.13 ^{**}	.23 ^{***}	.31 ^{***}															
8. Pers. self-efficacy		-.16 ^{***}	.04	.07	-.02	.36 ^{***}	.02	.28 ^{***}														
9. Collective efficacy		-.09 [*]	.02	.10 [*]	.00	.39 ^{***}	.13 ^{**}	.28 ^{***}	.60 ^{***}													
10. Participative efficacy		-.13 ^{**}	.14 ^{**}	.16 ^{***}	.12 ^{**}	.40 ^{***}	.02	.23 ^{***}	.62 ^{***}	.52 ^{***}												
11. DN friends		.06	.13 ^{**}	.11 [*]	.13 ^{**}	.11 [*]	.14 ^{**}	.00	.13 ^{**}	.17 ^{***}	.13 ^{**}											
12. DN movement		.02	.10 [*]	.21 ^{***}	-.03	.25 ^{***}	.13 ^{**}	.07	.13 ^{**}	.19 ^{***}	.15 ^{***}	.25 ^{***}										
13. DN family		.01	.14 ^{**}	.07	.16 ^{***}	.09 [*]	.02	.09	.11 [*]	.02	.10 [*]	.32 ^{***}	.13 ^{**}									
14. Injunctive norms		.12 ^{**}	.06	.07	.07	.16 ^{***}	.04	.13 ^{**}	.11 [*]	.07	.15 ^{***}	.31 ^{***}	.16 ^{***}	.36 ^{***}								
15. VM integrated		-.06	.19 ^{***}	.23 ^{***}	.05	.38 ^{***}	.13 ^{**}	.24 ^{***}	.23 ^{***}	.28 ^{***}	.33 ^{***}	.19 ^{***}	.20 ^{***}	.15 ^{**}	.11 [*]							
16. VM enh/pro		.09 [*]	-.05	.09	-.12 ^{**}	.24 ^{***}	.24 ^{***}	.18 ^{***}	.22 ^{***}	.29 ^{***}	.18 ^{***}	.12 ^{**}	.20 ^{***}	.01	.12 ^{**}	.37 ^{***}						
17. VM intrinsic		-.40 ^{***}	.04	.07	.01	.43 ^{***}	.08	.16 ^{***}	.31 ^{***}	.34 ^{***}	.32 ^{***}	.07	.09 [*]	.05	.03	.34 ^{***}	.25 ^{***}					
18. VM career		.12 ^{**}	.18 ^{***}	.08	.31 ^{***}	.17 ^{***}	-.05	-.01	.12 ^{**}	.15 ^{***}	.20 ^{***}	.16 ^{***}	.12 ^{**}	.01	.16 ^{***}	.19 ^{***}	.28 ^{***}	.20 ^{***}				
19. VM understanding		-.11 [*]	.08	.14 ^{**}	.09 [*]	.36 ^{***}	.10 [*]	.10 [*]	.23 ^{***}	.34 ^{***}	.34 ^{***}	.09 [*]	.15 ^{***}	.06	.11 [*]	.44 ^{***}	.38 ^{***}	.49 ^{***}	.39 ^{***}			
20. Autonomy need S		-.24 ^{***}	.06	.08	.00	.32 ^{***}	.09 [*]	.22 ^{***}	.26 ^{***}	.25 ^{***}	.38 ^{***}	.06	.08	.07	.46 ^{***}	.13 ^{**}	.48 ^{***}	.07	.39 ^{***}			
21. Autonomy need F		.41 ^{***}	.11 [*]	.15 ^{***}	.05	-.15 ^{***}	.03	.04	-.04	-.07	.00	.02	.14 ^{**}	.08	.21 ^{***}	.05	.19 ^{***}	-.33 ^{***}	.08	-.05	-.17 ^{***}	
22. Relatedness need		-.28 ^{***}	.09 [*]	.09	.01	.40 ^{***}	.09 [*]	.04	.14 ^{**}	.15 ^{***}	.21 ^{***}	.19 ^{***}	.14 ^{**}	.04	.30 ^{***}	.10 [*]	.39 ^{***}	.08	.34 ^{***}	.35 ^{***}	-.18 ^{***}	
23. Competence need		-.45 ^{***}	.18 ^{***}	.12 ^{**}	.09 [*]	.35 ^{***}	-.02	.04	.27 ^{***}	.24 ^{***}	.36 ^{***}	.11 [*]	.12 ^{**}	-.01	.22 ^{***}	.02	.42 ^{***}	.07	.24 ^{***}	.35 ^{***}	-.33 ^{***}	.44 ^{***}

Note. Engagement (vol) = voluntary engagement, Engagement (pay) = paid engagement dichotomized, ID movement = identification with the movement, Pers. self-efficacy = personal self-efficacy, DN = descriptive norms, VM enh/pro = enhancement and protective volunteer motivation, Autonomy need S = autonomy need satisfaction, Autonomy need F = autonomy need frustration, $p < .05$, $p < .01$, $p < .001$.

Table 4
Linear regression models explaining activist burnout (emotional exhaustion) (Study 2)

Model 1: Structural variables					Model 2: Psychological variables (replication)					Model 3: Psychological variables (additional hypotheses)					Model 4: Psychological variables (explorative)				
	B	SE	β (95%-CI)	p	B	SE	β (95%-CI)	p	B	SE	β (95%-CI)	p	B	SE	β (95%-CI)	p			
(Intercept)	2.64	0.06		<.001	4.20	0.29		<.001	3.91	0.37		<.001	4.35	0.39		<.001			
Engagement (vol)	0.01	0.00	0.07 (-0.02, 0.16)	.122															
Engagement (pay)	0.25	0.08	0.14 (0.05, 0.23)	.003															
Engagement (total)					0.01	0.00	0.11 (0.02, 0.20)	.014	0.01	0.00	0.10 (0.01, 0.19)	.025	0.01	0.00	0.11 (0.03, 0.19)	.005			
ID movement					-0.18	0.05	-0.17 (-0.26, -0.08)	<.001	-0.20	0.06	-0.19 (-0.29, -0.09)	<.001	-0.04	0.05	-0.03 (-0.12, 0.06)	.484			
Personal self-efficacy					-0.08	0.04	-0.11 (-0.20, -0.01)	.024	-0.10	0.05	-0.13 (-0.25, -0.00)	.042	-0.05	0.04	-0.06 (-0.17, 0.04)	.209			
Collective efficacy									0.05	0.06	0.06 (-0.06, 0.17)	.335	0.06	0.05	0.06 (-0.04, 0.16)	.222			
Participative efficacy									-0.03	0.05	-0.04 (-0.15, 0.08)	.547	0.02	0.04	0.03 (-0.07, 0.13)	.598			
DDN friends									0.04	0.03	0.07 (-0.03, 0.16)	.159	0.02	0.02	0.04 (-0.04, 0.13)	.317			
DDN movement									0.04	0.03	0.05 (-0.04, 0.15)	.249	-0.01	0.03	-0.01 (-0.09, 0.07)	.820			
VVM integrated									-0.01	0.05	-0.01 (-0.11, 0.09)	.875	0.01	0.05	0.01 (-0.08, 0.11)	.785			
Affective injustice													0.14	0.03	0.19 (0.11, 0.27)	<.001			
Moral convictions													-0.04	0.03	-0.04 (-0.12, 0.04)	.298			
Injunctive norms													0.04	0.03	0.05 (-0.03, 0.14)	.191			
DDN family													-0.02	0.02	-0.04 (-0.12, 0.04)	.379			
VVM enh/pro													0.04	0.04	0.05 (-0.04, 0.14)	.288			
VVM intrinsic													-0.26	0.05	-0.24 (-0.34, -0.14)	<.001			
VVM career													0.08	0.02	0.14 (0.06, 0.22)	.001			
VVM understanding													0.00	0.06	0.00 (-0.10, 0.10)	.997			
Autonomy need S													-0.02	0.04	-0.02 (-0.11, 0.07)	.675			
Autonomy need F													0.12	0.03	0.18 (0.10, 0.27)	<.001			
Relatedness need													-0.07	0.04	-0.07 (-0.16, 0.02)	.132			
Competence need													-0.25	0.04	-0.27 (-0.36, -0.18)	<.001			
				$R^2 = .024$															
				$F(2, 468) = 5.70^{**}$															

4.3 Discussion of Study 2

Study 2 replicated the results of Study 1 (H1, H2): emotional exhaustion as the prime indicator of activist burnout was positively associated with engagement hours and being paid for socio-ecological engagement, and negatively related to identification with the socio-ecological movement and personal self-efficacy. However, contrary to H3, the additional variables we tested did not explain emotional exhaustion beyond these core aspects. Explorative analyses revealed other variables that could explain emotional exhaustion (e.g., affective injustice, autonomy frustration, and intrinsic motivation). Furthermore, movement identification demonstrated robust negative associations with multiple burnout dimensions and positive associations with wellbeing outcomes.

5 General discussion

This research set out to explain activist burnout. By examining structural variables (e.g., engagement hours, being paid for engagement) and psychological variables (e.g., social identification, self-efficacy), we provide an initial picture of the aspects quantitatively associated with burnout among environmentally engaged individuals.

5.1 Structural aspects linked to activist burnout

In line with previous research, more collective action – measured as engagement hours here – was associated with more activist burnout (see Hamann et al., 2021; Moreno-Jiménez & Villodres, 2010; Vandermeulen et al., 2022). Yet, the pattern differed slightly between studies. In Study 1, voluntary engagement hours explained burnout, whereas in Study 2, engagement hours only explained activist burnout when voluntary and paid involvement were considered together. We therefore conclude that it is the total workload, rather than the voluntary nature of activist work, that contributes to burnout.

Total workload did not only relate to being emotionally exhausted but also to de-personalizing others in one's engagement, reflecting interviewees' reports about emotional numbness and distance (Hamann, Wenzel et al., 2025). At the same time, engagement hours were also related to positive affect. While these two findings might initially appear inconsistent, positive affect and burnout symptoms may be experienced concurrently. Reflecting this complexity, Eklöf and colleagues (2025) found that activists sometimes attributed overwork to positive experiences in their activism.

Our results also support the notion that being paid for socio-ecological work relates to activist burnout (Vecina et al., 2001, as cited in Moreno-Jiménez & Villodres, 2010). Exploratory analyses indicate career motivation as one possible pathway. Of all variables, career motivation showed the strongest relationship with being paid ($r = .33$) and was itself positively correlated with burnout. Individuals who are paid for engagement may feel they have to go the extra mile if they want to pursue a career in the socio-ecological movement (Gorski et al., 2019). Alternatively, employed individuals might be more likely to report burnout symptoms as burnout is regarded as a work-related issue.

Surprisingly, the number of initiatives participants were involved in did not explain burnout. Likewise, number of groups was not significantly associated with physical or mental health outcomes in US youth activists (Conner et al., 2023b). Individuals involved in multiple initiatives may carry lighter responsibilities in each, which could compensate for a more complex schedule. Moreover, demographic variables generally did not explain activist burnout beyond psychological variables. It seemed plausible that those already facing a demanding regular work schedule would be particularly susceptible to activist burnout. Yet, demands in the workplace do not seem to be related to exhaustion in the activist sphere.

5.2 Psychological aspects linked to activist burnout

We consistently found that social identification was associated with lower levels of burnout and negative affect. This finding aligns with previous qualitative and quantitative work (Conner et al., 2023a; Molina et al., 2017; Vandermeulen et al., 2022), as well as meta-analytical evidence from organizational psychology demonstrating a positive relationship between social identification and health within organizations (Steffens et al., 2017). Exploratory analyses from Study 2 further underscore the robustness of this association across burnout dimensions (i.e., depersonalization, lack of personal accomplishment) and further context-independent indicators of wellbeing (i.e., satisfaction with life, and subjective vitality). In line with the idea of social identities as a social cure (Haslam et al., 2018), group membership in the socio-ecological movement may provide people with psychological resources that promote wellbeing beyond the specific context of their engagement.

Notably, we observed medium to strong correlations between social identification and intrinsic motivation. In an exploratory model that included intrinsic motivation as an explanatory variable, the latter negatively explained activist burnout, rendering social identification insignificant, thus possibly hinting at a mediating role. Together, these findings suggest that social identification may create a fun and nourishing environment for group members that could protect against burnout within the contexts studied. However, the relationship between social identification and activist burnout may depend on specific boundary conditions such as group size. For example, in larger groups, strong identification may facilitate the distribution of responsibilities across many members, whereas in smaller groups, high identification could translate into greater perceived responsibility and pressure on each individual. Future research should examine the moderating role of group size in this association.

Qualitative studies provide plenty of suggestions regarding the positive effects of feeling empowered and enthusiastic, as well as the negative consequences of perceiving personal pressure (e.g., Chen & Gorski, 2015; Conner et al., 2023b; Gauditz, 2025). Our findings shed some light on the relationship between burnout and diverging efficacy types. Across studies, we found personal self-efficacy to be associated with lower burnout levels, consistent with the results of Hamann and colleagues (2021). Notably, our self-efficacy measure was conceptualized as an abstract link between an agent (“I”) and an environmental aim, thereby possibly capturing elements of related constructs such as hope and optimism, which have been discussed in the context of activist burnout (Gorski et al., 2019; Nairn, 2019). Self-

efficacy no longer explained burnout when we included competence need satisfaction as an exploratory variable in Study 2. We propose that satisfaction of competence needs may encompass aim-related aspects, similar to our self-efficacy measure, and action-related aspects, which pertain to the belief in one's ability to act (see Hamann et al., 2024; Bandura, 1997). Future studies could disentangle these aspects as part of a group-independent efficacy belief.

Contrasting previous work (Hamann et al., 2021), we did not consistently find that activist burnout was negatively related to collective efficacy and positively to participative efficacy. However, this pattern appeared when applying stricter exclusion criteria in Study 1, and, in Study 2, participative efficacy was positively associated with both depersonalization and positive affect, and negatively with lack of personal accomplishment. We assume that when collective and participative efficacy are analyzed together, participative efficacy represents the belief that the group cannot achieve its goals without one's individual contribution. Individuals with this mindset may struggle to say no (Frick et al., 2022; Maslach & Leiter, 2010) and lack trust in fellow group members (Hamann et al., 2021). At the same time, they may receive appreciation for their efforts, resulting in a sense of accomplishment and positive affect. The pressures accompanied by participative efficacy may also be related to frustrated autonomy needs, which our exploratory analyses identified as explaining burnout. Overall, our findings suggest that activist burnout may depend on nuanced combinations of efficacy beliefs.

Not in line with expectations, descriptive norms of friends and the movement did not explain activist burnout in our main analyses, though movement norms explained burnout in robustness checks of Study 2. In general, these results call into question Gorski and colleagues' (2019) suggestion that friendships within the movement are a driver of activist burnout. Notably, our measure of descriptive norms captured only whether friends were actively involved, without assessing the extent of this involvement. It is possible that only particularly high levels of involvement among close others are associated with activist burnout. Surprisingly, integrated motivation was not positively related to activist burnout, as suggested by previous qualitative research (Gorski et al., 2019). Instead, it was unrelated to emotional exhaustion, but associated with less depersonalization, more perceived personal accomplishment, and more positive affect. Making activism one's life purpose may therefore promote a more sustainable form of engagement, protecting individuals from feelings of disconnection and ineffectiveness even under heavy workload. This finding aligns with other qualitative work identifying life purpose as a protective factor against activist burnout (Conner et al., 2023a; Driscoll, 2020).

Two exploratory variables merit further discussion: affective injustice and guilt. Consistent with Vandermeulen and colleagues (2022), we found that affective injustice was related to greater activist burnout. Although activism can serve as an emotional outlet (Conner et al., 2023a; Schwartz et al., 2023), repeated exposure to contexts that evoke anger (e.g., protest speeches, police violence) may lead to persistent, chronic anger and thus represent a stressor feeding into burnout (Chen & Gorski, 2015; Chen et al., 2024). Our study focused on anger directed at the government and economy, so the association with burnout could be attributed to

outrage about slow progress resulting from lack of reform (see Gomes, 1992). Previous research has explored other targets of anger (Gregersen et al., 2023). We would expect comparable findings for anger directed at people and their actions, or humanity as a whole, as such forms of anger may be connected to the depersonalization dimension of burnout. Given that affective injustice may simultaneously drive collective action and harm an individual's wellbeing, it warrants closer examination.

To our surprise, enhancement and protective volunteer motivation, which includes aspects of guilt, was only weakly related to activist burnout. While guilt, especially about being a white person from the Global North, has been frequently reported to be a burnout driver (Chen & Gorski, 2015; Conner et al., 2023a; Hamann, Wenzel et al., 2025), our measure only captured a personal guilt. It is possible that it is rather a culture of guilt and selflessness within activist groups that fosters burnout (Chen & Gorski, 2015).

5.3 Limitations and future directions

First, our study concentrated on structural and psychological aspects at the individual level. However, as noted, group cultures may be fundamental to activist burnout. Future research should therefore consider group-level aspects such as cultures of selflessness and depressed servitude, emotional fit, infighting, and structural discrimination (Giæver & Russell, 2024; Gorski et al., 2019; Vandermeulen et al., 2022). Including these aspects may also improve the explained variance in activist burnout.

Second, it is important to note that our definition of activist burnout was derived from psychological research (APA, n.d.-a) rather than from the qualitative interviews that informed our hypotheses. These interviews adopted a considerably broader understanding of burnout, including physical and emotional symptoms – some of which we conceptualized as explanatory variables (e.g., low personal self-efficacy). Despite these differences, some of the hypotheses most strongly emphasized in interviews were supported by our quantitative results (e.g., concerning social identification). Given these conceptual differences and existing critiques of the MBI (Shoman et al., 2021), future studies may benefit from considering alternative burnout inventories, including instruments that more comprehensively capture physical symptoms.

Third, although our assessment of activist burnout was comparatively narrow, our sampling strategy was quite broad. Whereas prior qualitative research often centered on activists who had already experienced burnout, possibly due to extensive workloads, our study focused on environmentally engaged individuals with varying levels of involvement. As a result, important questions remain as to which forms of engagement are most strongly associated with activist burnout and under what conditions burnout leads to a complete withdrawal from engagement. Future research should incorporate variables that better delineate sample characteristics (e.g., main engagement tasks, environmental domain, previous burnout experience) to allow for more nuanced connections with burnout outcomes.

Fourth, data for Study 2 were collected during the COVID-19 pandemic, which may have affected our results. However, most participants reported that their activism either increased (43%) or stayed the same (25%) during this period. Fifth,

our main findings are based on German-speaking and well-educated populations. Since activist burnout likely depends on political repression and other country- or culture-specific aspects, studies from different contexts, particularly where activists face severe structural violence (see Global Witness, 2022), would be highly valuable. Sixth, due to the scientific novelty of the topic, our work relied on cross-sectional analyses, many of them exploratory. A logical next step would be to design models with first- and second-order predictors that can be tested experimentally.

5.4 Practical implications and conclusion

In this research, we identified the aspects that are associated with activist burnout – aspects that may prove valuable for building a resilient socio-ecological movement. On the one hand, we detect an activist burnout dilemma (Hamann, Junge et al., 2025): volunteer hours, affective injustice and – to some degree – participative efficacy are associated with collective action but may also increase the risk of burnout. Socio-ecological organizations need to find sustainable strategies to address these aspects to enable long-term engagement. Qualitative work recommends promoting self-care (e.g., hobbies, meditation; Conner et al., 2023a; Giæver & Russell, 2024; Gorski, 2019), practicing anger management and creating emotional support groups (Hamann, Wenzel et al., 2025). Special attention should be given to members pursuing careers in the field, as they may be particularly vulnerable to developing burnout.

On the other hand, our research highlights how pre-existing motivation for collective action can be leveraged for resilient engagement, by fostering social identification and personal self-efficacy. With these, initiatives can simultaneously strengthen their members' motivation and health. To do so, initiatives should make volunteering joyful (Frick et al., 2022; Nepstad, 2004), facilitate strong connections among members (Nepstad, 2004; Wilf et al., 2024), promote a sense of competence and realistic optimism about their accomplishments (Driscoll, 2020; Nairn, 2019), develop long-term efficacy perspectives (Eklöf et al., 2025), and encourage task autonomy. Such need-centered environments may help individuals to become resilient agents for socio-ecological transformation.

6 Open science statement

The final datasets analyzed during the current study and analysis script are available in the OSF repository, <https://osf.io/s5bmn>. Supplementary materials, including questionnaire items and additional analyses, are available in the OSF repository, <https://osf.io/s5bmn>. We report all data exclusions and confirm that this manuscript includes all studies we have analyzed addressing the present research question. Both studies were part of larger investigations (e.g., a four-wave longitudinal project) and therefore included additional measures that are beyond the scope of this article. A complete list of assessed measures can be obtained from the corresponding author upon request. Given the scarce quantitative evidence regarding the topic of activist burnout and the difficulty of recruiting environmentally engaged individuals, we aimed for a minimal sample size of $N = 107$ participants ($f^2 = 0.15$, $\alpha = .05$, Power = .95), in order to detect a medium effect on our main dependent variable in both studies. In Study 1, our actual sample size of $N = 268$ exceeded the requirement for detecting a medium effect size when simultaneously including three independent variables each in the analyses for H1 and H2 ($N = 119$ required). For Study 2, the sample included $N = 483$ participants, which was sufficient to detect a medium effect size for analyses involving two independent variables (H1, $N = 107$ required), three independent variables (H2, $N = 119$ required), eight independent variables (H3, $N = 160$ required), and for more explorative analyses with up to twenty independent variables ($N = 222$ required). Data collection took place in 2019 and 2021, at a time when preregistration practices were not yet widely adopted; consequently, our hypotheses were unfortunately not preregistered. During the preparation of this work, the main author used ChatGPT-5 mini to assist with language revision. The author takes full responsibility for the content of the published article.



7 References

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