

**Educational Humiliation, Rumination, and Anhedonia: A Retrospective Study Among
Young Adults Recalling Secondary Education Experience**

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Abstract

Background

According to social rank theory, educational humiliation, an experience that may occur in educational settings, may induce an involuntary subordinate mode in students, leading to maladaptive cognitive behaviors such as rumination, and may be relevant to reward-related difficulties such as anhedonia. However, existing literature primarily focuses on the relationship between shame and rumination, and studies on educational humiliation mainly rely on qualitative methods. This study, therefore, provides a quantifiable examination of educational humiliation and its associated negative cognitive effects and later reward-related deficits.

Methods

After applying the exclusion criteria, a total of 54 participants completed the modified humiliation inventory, ruminative response scale, and temporal experience of pleasure scale to assess cumulative and fear of educational humiliation, rumination, and hedonic capacity, respectively. Pearson's product-moment correlations were used to examine the relationships between educational humiliation and rumination and hedonic capacity, and simple linear regression analysis was also employed to test the hypotheses. Mediation analysis was planned to examine the potential mediation effect between three variables.

Results

Pearson's product-moment correlation test showed that both cumulative humiliation ($r(52) = .27, p = .049$) and fear of humiliation ($r(52) = .47, p < .001$) were positively associated with rumination. Moreover, the simple linear regression revealed both fear of humiliation ($\beta = .47, p < .001, R^2 = .22$) and cumulative humiliation ($\beta = .27, p = .049, R^2 = .07$) also significantly predicted higher rumination. Nevertheless, educational humiliation was not significantly associated with TEPS scores at both aggregate and subscale levels. Given that no

correlation was found between educational humiliation and hedonic capacity, a mediation analysis was not performed.

Conclusions

This study found that educational humiliation is associated with rumination and that the fear of humiliation is more strongly correlated with rumination than cumulative humiliation. This may be because recalled fear of humiliation captures the subjective threat or emotional intensity of humiliating experiences more directly than cumulative exposure, thereby intensifying self-shame and leading to greater ruminative response. It has implications for curriculum design and teaching methods and calls for future research to focus on longitudinal designs with larger samples and more refined measures of reward-related difficulties.

Educational Humiliation, Rumination, and Anhedonia: A Retrospective Study Among Young Adults Recalling Secondary Education Experience

Educational humiliation refers to experiences in which a student is publicly or implicitly degraded by an authority figure within a school-sanctioned disciplinary context, in ways that communicate inferiority, incompetence, or unworthiness (Markman et al., 2019; Adamson, 2022; Sirvent & Irfan, 2025). Compared with shame, humiliation places greater emphasis on external devaluation, its mechanism stemming more from the forced demotion of the self by others, instead of an internalized psychological mechanism, such as when the observer and the other are absent, people frequently picture how their flawed self would appear to others (Sterelny et al., 2013). Unlike peer bullying, which tends to occur within informal peer status hierarchies and is less tied to formal disciplinary structures (Rambaran et al., 2019), educational humiliation is often perpetrated by authority figures and embedded within the legitimized structure of school discipline, such as publicly declaring weakness (Adamson, 2022).

Across various studies, educational humiliation has been discovered across multiple cultures and educational systems. Historically, it has been a means of disciplinary control in schools, which for centuries was also accepted by parents (Ávila-Toscano et al., 2024), and has been perpetrated under the guise of “discipline” and “academic management.” It is not merely the uncontrolled behavior of individual teachers, but a normal means within the system. From 19th-century Croatia under the Habsburg Monarchy to present-day Tanzania, education, as a product of society and social relations, frequently employed humiliation as a disciplinary tool to maintain social order in classrooms (Snježana Dubovicki & Emerik Munjiza, 2024; Adamson, 2022). This institutional nature makes the experience particularly inescapable and damaging, as it attacks not just the student’s self-esteem but their trust in the developmental environment itself. A recent meta-analysis has suggested that public

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humiliation is strongly linked to emotional distress, anxiety, depression, PTSD symptoms, suicidal ideation, burnout, and trauma (Li et al., 2024). In the medical education context, it causes students reduced confidence, avoidance of certain teachers, and sometimes consider leaving medicine (Wilkinson et al., 2006). However, most of the existing literature on educational humiliation has relied on qualitative approaches (e.g. ethnographic classroom observations, historical document analyses) (Adamson, 2022; Dubovicki & Munjiza, 2024) or on secondary quantitative evidence summarized in systematic reviews and meta-analyses (Li et al., 2024), typically focusing on broad mental health outcomes. As a result, relatively little is known about whether, and how, school-based humiliation is linked to specific cognitive and hedonic patterns in young adults, such as rumination and anhedonia.

Examining rumination and anhedonia may offer added value beyond broader indicators of mental health, as these outcomes may capture more specific cognitive and reward-related processes through which humiliating educational experiences become psychologically embedded. Anhedonia has been reconceptualized not simply as the inability to experience pleasure, but more broadly as “impairments in the ability to pursue, experience, and/or learn about reward” (Rømer Thomsen, 2015), and it has been identified as an important predictor of persistent functional impairment and risk of chronicity in youth (Vauwaz Z H et al., 2025). Examining anhedonia may therefore help identify whether educational humiliation is associated with a pattern of reward-related difficulty that may indicate greater longer-term psychological and functional risk. Moreover, rumination is a repetitive, negatively valenced thinking style that is known to maintain distress and self-critical processing (Watkins & Roberts, 2020). A recent meta-analysis estimated that approximately 21.3% of children and adolescents globally experience depression or depressive symptoms (Lu et al., 2024). In this context, rumination is a particularly important outcome to examine, not only because it has been identified as a vulnerability factor for

depression (Krings, 2020), but also because it may represent a key mechanism through which adverse or humiliating experiences become linked to more serious outcomes. For example, recent work has suggested that rumination may help explain the association between childhood trauma and non-suicidal self-injury in depressed adolescents (Zhou, 2025). Examining whether educational humiliation is associated with rumination may therefore be clinically meaningful, as it may help identify one pathway through which humiliating school experiences contribute to later psychological risk.

To clarify these potential mechanisms, the present study draws on theoretical models that explicitly conceptualize humiliation as a threat to social rank, making social rank theory (SRT) (Gilbert, 2000) a particularly relevant framework for explaining how repeated rank threat may become internalized into persistent cognitive-emotional patterns. According to the SRT (Gilbert, 2000), humiliation functions as a signal of forced subordination. When an individual detects loss of status, rejection, or devaluation, especially in contexts where escape or contest is costly, the threat-defense system may shift toward an involuntary subordinate mode. It heightens threat monitoring, self-protective inhibition, appeasement, and social withdrawal (Gilbert, 2001). In this account, depressive states are not simply “low mood,” but a defensive strategy that reduces further social damage when the person experiences defeat and entrapment within a hierarchy. Therefore, educational humiliation functions as an institutionalized rank-threat, administered by legitimate authority in explicitly hierarchical, publicly evaluative settings (e.g., grades, classroom audiences). Practices such as public shaming, sarcasm, or exposure of failure function as structural signals of forced subordination. They communicate to the student not merely “you did something wrong,” but “your position is lower and visible to others,” thereby increasing the likelihood that rank-regulation shifts from acute alarm to chronic defensive adaptation.

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Crucially, SRT helps specify a pathway from humiliation to cognitive and motivational sequelae. First, rank-threat fosters persistent self-focused monitoring and anticipatory vigilance, which may consolidate into rumination. Yet rumination paradoxically sustains the threat state by rehearsing devaluation and amplifying self-criticism, keeping the individual psychologically “stuck” in defeat or entrapment. Second, prolonged subordinate-mode functioning plausibly reduces approach motivation and reward engagement: social withdrawal narrows access to rewarding experiences, and defensive inhibition prioritizes safety over exploration. Over time, this pattern offers a plausible route from institutional humiliation to anhedonia, diminishing interest, reward sensitivity, and positive affect. Cheung et al. (2004) found that both external and internal shame, which are likely consequences of humiliation, were significantly associated with ruminative responses. This ruminative cognition pattern partially mediated the relationship between shame and depressive symptoms in a non-clinical sample. Moreover, Gerhart et al. (2021) suggested that affective shame is positively correlated with anhedonia and interpersonal deficits. Yet this body of work has largely operationalized rank-related threat as shame or global internalizing symptoms, rather than educational humiliation per se. It therefore remains unclear whether humiliation in secondary school shows similar links with rumination and anhedonia in young adults.

At the same time, the effects of educational humiliation on individuals are not merely temporary. Adolescence represents a critical window for identity formation and sensitivity to social evaluation. As the dual-cycle model suggests, adolescents question, investigate, and develop a sense of self through cycles of commitment and exploration. Most of these changes are gradual and eventually lead to stronger identity commitments and greater clarity in one’s self-concept (Crocetti, 2017). Therefore, humiliating experiences during this developmental stage may be internalized as stable cognitive schemas that may persist beyond the immediate context. For example, research indicates that the internalization of maladaptive cognition

demonstrates that humiliation is not merely a transient event; instead, it can evolve into a chronic emotional burden that influences long-term psychological development (Kataria et al., 2025). In fact, school-based humiliation can be conceptualized as a form of emotional maltreatment within the educational setting. Research on childhood emotional abuse suggests that such experiences contribute to the development of stable early maladaptive schemas that mediate associations with later depression and anxiety, within which anhedonia and rumination are core features (Wright et al., 2009). Therefore, as time progresses, educational humiliation experienced during adolescence is likely to persist into young adulthood and produce enduring effects. To date, though, research on emotional maltreatment has focused predominantly on family relationships and other broader social contexts, leaving a gap in understanding how humiliation in educational settings relates to these longer-term cognitive-emotional patterns.

Retrospective self-report methods provide a useful foundation for assessing recollections of behavior, experiences, events and affect, as well as for obtaining global ratings of affective or psychological states and typical behavior based on prior experiences and knowledge (Metts et al., 1991). Their feasibility and acceptability have been demonstrated in numerous studies examining adverse early experiences and later mental health outcomes (Ford et al., 2020; Reznick et al., 1992). Conceptually, the present study concerns past, discrete experiences within a specific developmental period and examines their associations with relatively stable cognitive and hedonic tendencies in young adulthood, rather than short-term symptom fluctuations. Retrospective self-report is therefore an appropriate method for capturing the perceived severity and frequency of humiliating practices across secondary schooling.

While Gilbert (2000) conceptualizes shame as a central affective response to perceived devaluation and social rank threat, subsequent work has linked shame with maladaptive

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cognitive processes, including ruminative self-focus (Cheung et al., 2004). Building on this literature, the present study shifts the focus upstream by explicitly isolating educational humiliation as the external antecedent that activates these ruminative cycles, examining the structural roots of the distress rather than just the internal emotional aftermath. By focusing exclusively on the external antecedent, this study extends these concepts into a social and structural context by examining whether secondary school humiliation contributes to rumination and, in turn, long-term anhedonia tendencies. The present study therefore had two main aims. First, it aimed to examine whether recalled educational humiliation in secondary school is associated with rumination and anhedonia in young adulthood. Second, it aimed to test whether rumination mediates the association between humiliation and anhedonia. By integrating a retrospective design with a cross-sectional survey, it is hypothesized that experiences of educational humiliation will be positively associated with higher levels of rumination and lower hedonic capacity (i.e., greater anhedonia tendencies), and that rumination will mediate the relationship between educational humiliation and hedonic capacity, such that higher levels of humiliation will predict increased rumination, which in turn will predict lower hedonic capacities.

Methods

Study Design

This study employed a cross-sectional, retrospective design to examine whether recalled secondary educational humiliation predicted current levels of anhedonia and rumination, and whether rumination accounted for the association between humiliation and anhedonia.

Participants

One hundred and three participants were recruited from January 2026 to February 2026 using online convenience sampling via the IOE research participant pool and social media (e.g., LinkedIn, WeChat, Threads, Instagram). Inclusion criteria were: 1) participants were aged 18 years or older; 2) had completed at least part of their secondary schooling; and 3) were able to read and complete the questionnaire in English. Participants were excluded if: 1) they failed at least one attention-check item embedded in the survey (e.g., “Please select ‘3’ for this question to show that you are reading carefully”); 2) they had substantial missing data across the main study variables, defined as more than ten missing item responses across the sixty scale items (approximately 16.7%) ; 3) they did not provide informed consent. Because some excluded cases met multiple exclusion criteria, exclusion counts are not mutually exclusive. After applying these criteria, the final analytic sample consisted of 54 participants. This was below the target of the G*Power calculated minimum sample size of 77 required to detect the hypothesised effect with 80% power at $\alpha = .05$. Overall, participants were male (20/37%), female (33/61%), and non-binary gender (1/1.9%), with an age range from 18 to 63 years old (mean age = 24.5, SD = 7.8). Participants reported the following highest level of education completed; among those who chose to respond, this was secondary education (26/48.1%), undergraduate degree (19/35.2%), postgraduate degree (7/13%), and 2 participants (3.7%) preferred not to report their educational background. Most of the

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participants were students (36/66.7%) at the time of participation; some were in full-time employment (12/22.2%); and some were unemployed (1/1.9%). A small number of participants chose not to report (3/5.6%) and selected “other” (2/3.7%) when stating occupational status.

Measures

Participants completed a brief demographic questionnaire assessing age, gender, highest level of education completed, current employment status, and secondary school type.

To measure educational humiliation, the refined version of the Humiliation Inventory (HI) (See Appendix B) (Hartling & Luchetta, 1999) was employed. Given the retrospective nature of this study, the original items were refined to specifically prompt recall of interactions with teachers and other authority figures during secondary school (e.g., by adding the phrase “during your secondary school years”). The scale consists of 32 items measuring both the cumulative experience of humiliation and the fear of humiliation. Participants rate items on a 5-point Likert scale ranging from 1 (Not at all) to 5 (Extremely) (e.g., “During your secondary school years, how seriously have you felt harmed by being teased?”). Higher scores indicate a greater history of humiliating educational experiences. In the present study, total humiliation scores as well as subscale scores for cumulative humiliation and fear of humiliation were calculated and examined.

Rumination was measured using the 10-item Ruminative Responses Scale (RRS) developed by Treynor et al. (2003) (see Appendix C). This version was derived from the original RRS by removing items that overlapped with depressive symptom content, with the aim of providing a purer measure of the ruminative cognitive process unconfounded by current mood state. Participants rate how often they engage in specific thoughts (e.g., “Think ‘Why do I always react this way?’”) on a 4-point scale from 1 (Almost never) to 4 (Almost always).

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The Temporal Experience of Pleasure Scale (TEPS) (See Appendix D) (Gard et al., 2006) was used as an index of hedonic capacity. This 18-item scale is distinct in its ability to differentiate between anticipatory pleasure (e.g., “I look forward to a lot of things in my life”) and consummatory pleasure (e.g., “The smell of freshly cut grass is enjoyable to me”). Items are rated on a 6-point Likert scale ranging from 1 (Very false for me) to 6 (Very true for me). Lower scores reflect reduced pleasure experience and, by implication, greater anhedonic tendencies. Reverse scoring was applied to one item (e.g., “I don’t look forward to things like eating out at restaurants”). In the present study, a total TEPS score was used in the main analyses.

Ethical Considerations

Data collection commenced following ethical approval (see Appendix A) from the module leader of PHDE0058: Psychology Research Project at University College London (UCL). The study was administered entirely online using a secure survey platform (e.g., Qualtrics), which allows for anonymous data collection and secure storage in UCL OneDrive. Participants accessed the questionnaire via a specific online link, where they first read the information sheet and endorsed an online ethical consent form in accordance with the Code of Ethics and Conduct of the British Psychological Society (BPS) (British Psychological Society, 2021).

Procedure

After obtaining informed consent, participants who wished to proceed with the study completed a brief demographic section (age, gender, and educational background) to confirm eligibility. Those who chose not to participate were thanked for their time and offered the choice to leave the study. Attention check items, such as “Please select ‘Somewhat Agree’ for this question”, were embedded within the scales to ensure data quality and identify careless responding. After participants finished the questionnaire, a comprehensive debriefing page

was displayed upon completion. This page explained the study's theoretical goals in greater detail and provided contact information for mental health support services (e.g., university counselling centres and helplines) to mitigate temporary distress associated with recalling negative secondary education experiences.

Data Analysis

All statistical analyses were conducted using R (version 4.3.3) (Posit team, 2025). The significance level was set at $\alpha = .05$ (two-tailed). Prior to hypothesis testing, assumptions for the planned parametric analyses were assessed, including tests for linearity, homoscedasticity, and residual normality. Homoscedasticity was assessed using residuals-versus-fitted plots and the Breusch-Pagan test using the *lmtest* package (Zeileis & Hothorn, 2002). The normality of residuals and observed variable distributions was assessed using the Shapiro-Wilk test and visual inspection of Q-Q plots. Potential univariate outliers were inspected using standardized scores and visual inspection of boxplots. The internal consistency of the adapted HI was evaluated using Cronbach's alpha (α), with values $> .70$ considered acceptable. Descriptive statistics, including means and standard deviations, were computed for all variables. Pearson's product-moment correlations (r) were used as the primary analyses to examine bivariate associations among total humiliation, cumulative humiliation, fear of humiliation, rumination, and hedonic capacity, as indexed by TEPS scores. To test the primary hypotheses, linear regression models were fitted with rumination and TEPS scores as dependent variables and total humiliation, cumulative humiliation, and fear of humiliation as predictors in separate models. To test the hypothesis that rumination mediates the relationship between educational humiliation and TEPS scores, a simple mediation analysis was initially planned using the mediation package (Tingley et al., 2014) in R. The indirect effect would have been tested using 5,000 non-parametric bootstrap samples. If the 95% confidence interval (CI) for the indirect effect did not include zero, the mediation hypothesis would have been considered to

be supported. A post hoc sensitivity power analysis using the pwr package (Champely, 2023) in R indicated that, given the final sample size of $N = 54$, with $\alpha = .05$ (two-tailed) and power = .80, the study was sufficiently powered to detect at least medium-to-large associations of approximately $r = .40$.

Results

Descriptive Statistics

The final analytic sample consisted of 54 participants. The adapted HI, the only modified scale used in the present study, showed excellent internal consistency (Cronbach's $\alpha = .98$). Descriptive statistics for the main study variables are presented in Table 1. As shown there, participants reported higher fear of humiliation than cumulative humiliation.

Both TEPS and RRS scores were approximately normally distributed (TEPS: $W = .98$, $p = .44$; RRS: $W = .98$, $p = .59$). While the total humiliation ($W = .96$, $p = .054$) and fear of humiliation scores ($W = .96$, $p = .07$) were also approximately normally distributed, the cumulative humiliation score showed a modest positive skew ($W = .92$, $p = .002$), with skewness of .66 and kurtosis of -.55. Visual inspection of residual-versus-fitted plots and Q-Q plots showed no major violations of linearity and residual normality across all models, whereas Breusch-Pagan test suggested no evidence of residual heteroscedasticity ($BP = 0.11$, $p = .75$) for the regression models predicting rumination. However, the model predicting TEPS scores from total humiliation and its subscales showed evidence of heteroscedasticity ($BP = 7.83$, $p = .005$).

Table 1

Descriptive statistics for the main study variables

Variables	M	SD	Min	Max
Total Humiliation	82	32.6	32	148
Fear of Humiliation	55.6	22.7	20	100
Cumulative Humiliation	26.4	11.8	12	57
Rumination	24.9	6.37	6	38
TEPS	74.7	13.3	50	101

Note. TEPS, Temporal Experience of Pleasure Scale

Associations Between Humiliation, Rumination, and Anhedonia

As shown in Table 2, Pearson correlations showed that total humiliation was positively associated with rumination. At the subscale level, both cumulative humiliation and fear of humiliation were positively associated with rumination. However, total humiliation was not significantly associated with TEPS scores. Likewise, neither fear of humiliation nor cumulative humiliation showed a significant association with TEPS scores.

Table 2

Pearson correlations between educational humiliation indices, rumination, and TEPS scores

Predictor	Outcome	r	t	df	p	95% CI
Total Humiliation	Rumination	0.42	3.36	52	.001*	[.17, .62]
Fear of Humiliation	Rumination	0.47	3.79	52	< .001**	[.23, .65]
Cumulative Humiliation	Rumination	0.27	2.01	52	.049*	[.001, .50]
Total Humiliation	TEPS	-0.15	-1.12	52	.27	[-.40, .12]
Fear of Humiliation	TEPS	-0.10	-0.75	52	.45	[-.36, .17]
Cumulative Humiliation	TEPS	-0.22	-1.66	52	.10	[-.46, .05]

Note. TEPS, Temporal Experience of Pleasure Scale; * $p < .05$, ** $p < .001$

Regression Analyses

As detailed in Table 3, simple linear regression was conducted to examine whether humiliation predicted rumination and TEPS scores. The results showed that higher levels of total humiliation significantly predicted higher levels of rumination. Similarly, both fear of humiliation and cumulative humiliation also significantly predicted higher rumination. In contrast, total humiliation did not significantly predict TEPS scores. The same general pattern was observed for the humiliation subscales, with neither fear of humiliation nor cumulative

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humiliation emerging as a significant predictor of TEPS scores. Full statistical output for the reported analyses is provided in Appendix E.

Table 3

Simple linear regression analyses predicting rumination and TEPS scores from educational humiliation indices

Predictor	Outcome	β	SE	t	p	R ²
Total Humiliation	Rumination	0.42	0.13	3.36	.001*	0.18
Fear of Humiliation	Rumination	0.47	0.12	3.79	< .001**	0.22
Cumulative Humiliation	Rumination	0.27	0.13	2.01	.049*	0.07
Total Humiliation	TEPS	-0.15	0.14	-1.12	.27	0.02
Fear of Humiliation	TEPS	-0.10	0.14	-0.75	.46	0.01
Cumulative Humiliation	TEPS	-0.22	0.14	-1.66	.10	0.05

Note. TEPS, Temporal Experience of Pleasure Scale; * $p < .05$, ** $p < .001$

Mediation Analyses

As no significant association was found between educational humiliation and TEPS scores, the planned mediation analysis was not conducted.

Discussion

The present study examined whether recalled educational humiliation in secondary school was associated with rumination and hedonic capacity in young adulthood. Overall, the findings provided partial support for the hypotheses. Educational humiliation, including both cumulative humiliation and fear of humiliation, was positively associated with rumination. However, humiliation was not significantly associated with TEPS scores, suggesting no clear evidence of an association with hedonic capacity in the present sample.

The positive association between educational humiliation and rumination is in line with broader literature linking shame, perceived low social rank, and submissive behavior to greater rumination. For instance, Cheung et al. (2004) found that shame and submissive behavior were positively associated with rumination. Although it did not examine educational humiliation directly, the study's findings support the broader idea that experiences involving devaluation and subordinate positioning may foster repetitive self-focused thinking. One possible explanation is that, from a social rank perspective, being looked down on by others and unwanted low-rank positions are closely tied to shame and the activation of submissive defensive strategies (Gilbert, 2000). Therefore, humiliating experiences in school may be internalized as signals of devaluation and low social rank, potentially eliciting shame, prompting individuals to repeatedly reflect on their social worth and how they are seen by others (Wetherall et al., 2019).

Another notable finding of this study is that recalled fear of humiliation shows a stronger association with rumination than cumulative humiliation. To the best of my knowledge, no existing literature has identified or explained this phenomenon; however, the social rank perspective can still offer a plausible explanation for it. Specifically, the fear subscale may capture the subjective emotional intensity or perceived threat of humiliating

experiences more directly than cumulative humiliation, which more explicitly reflects the frequency of exposure to such experiences. These experiences may fuel distress, but rumination may be more closely tied to how threatening or distressing those experiences felt at the time than to how often they occurred. For example, research suggests that greater perceived threat is associated with increased rumination activity (Wu et al., 2022). In this sense, recalled fear of humiliation may reflect the degree to which humiliating school experiences were appraised as socially threatening and self-relevant, potentially involving stronger shame and submissive behavior, thereby making them more likely to remain cognitively salient and prone to ruminative thinking (Cheung et al., 2004).

However, educational humiliation was not significantly associated with TEPS scores. This null finding is difficult to situate within a well-developed literature, as existing literature has more often focused on broader outcomes such as emotional distress, depression, or reduced motivation, rather than hedonic functioning per se (Li et al., 2024; Mosalanejad et al., 2025). The possible explanation for this null finding is that anhedonia is more significantly predicted by deprivation than abuse when trauma is deconstructed. Neglect, as a deprivation-related form of adversity, has been more consistently linked to reward-learning deficits, which are a key mechanism behind anhedonia (Fan et al., 2023). Nevertheless, since humiliation may be more closely aligned with threat-related experiences, such as being degraded and ridiculed, its impact on hedonic capacity may be less pronounced or indirect in these models.

Another possible explanation is that the impact of educational humiliation may not be best conceptualized as a global hedonic deficit, but rather as a contextually embedded disturbance in motivation and reward-related experience within educational life, and the present study may not have captured the specific aspect of these phenomena. For instance, qualitative research in medical education suggests that humiliating educational environments may co-occur with academic demotivation and disengagement from theoretical content

(Mosalanejad et al., 2026), and deficits in these specific reward-related processes are frequently mistakenly classified as anhedonia (Der-Avakian & Markou, 2012). Thus, TEPS may have failed to capture the distinction, as it primarily assesses general anticipatory and consummatory pleasure (Gard et al., 2006) and may therefore have been insufficiently sensitive to the more education-specific forms of motivational and reward-related disruption associated with educational humiliation.

The present findings have important implications for educational practice. First, this study provides preliminary quantitative evidence that educational humiliation may be associated with later self-evaluative and ruminative thinking patterns in students. It demonstrates that humiliating classroom practices may not only cause short-term distress but also be associated with negative cognitive processes, such as rumination, that may remain observable years later. Therefore, the study's findings suggest that teacher feedback and classroom discipline management should avoid public belittling, humiliation, and shaming, and pedagogical approaches should prioritize respectful and non-humiliating methods. Given that most existing studies have focused on shame rather than humiliation, and that the smaller body of work on humiliation has often been qualitative, in this sense, the present study helps move the literature on humiliation beyond predominantly qualitative description by offering quantitative evidence of its potential psychological relevance in educational settings. It suggests that educational humiliation is not only a qualitatively describable experience, but also a phenomenon that can be meaningfully operationalized and quantitatively investigated, together with its potential longer-term psychological correlates.

In addition to the measurement-related limitations of TEPS discussed above, the present study has several broader limitations. First, the sample size was relatively small ($N = 54$), which fell short of the originally intended recruitment target ($N = 77$). Although the study was sufficiently powered to detect medium-to-large effects, smaller associations may have

gone undetected. In addition, the regression models involving TEPS scores showed evidence of heteroscedasticity, suggesting that these findings should be interpreted cautiously. Second, the study relied on retrospective recall of humiliation experiences in secondary school. Prior literature suggests that memories of past experiences may be systematically biased toward respondents' current state rather than accurately reflecting the original experience, which can affect retrospective recall. This bias is frequently stronger for subjective evaluations than for more objective information (Hipp et al., 2020; Stroom, 2025). Therefore, participants' recollections of secondary school experiences may not fully correspond to how those experiences were perceived or felt at the time. Third, the cross-sectional design precludes causal inference. Whereas educational humiliation was associated with rumination, the direction of this relationship cannot be established, and it remains possible that other unmeasured factors influenced both variables. Thus, future research should be based on larger samples and employ longitudinal methods, potentially including experience-sampling or ecological momentary methods where appropriate (Myin-Germeys et al., 2018), to clarify the temporal relationship between educational humiliation and later psychological outcomes. Most importantly, given that educational humiliation may involve more context-specific motivational and reward-related difficulties, more refined measurement tools may be needed. Future research should employ qualitative methods to identify specific themes, demonstrating the areas in which students experience reduced pleasure following educational humiliation, and then inform the development of more context-sensitive measures.

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