

Perfectionism, performance pressure, and self-esteem among software professionals: a cross-sectional study

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Abstract

Perfectionism and performance pressure are important determinants of psychological well-being among software professionals. This study examined the relationship between perfectionism (adaptive and maladaptive), performance pressure, anxiety, and self-esteem and identified factors independently associated with self-esteem. A cross-sectional study was conducted among 215 software professionals using convenience sampling. Data were collected using standardized instruments, including the Almost Perfect Scale-Revised, Rosenberg Self-Esteem Scale, Job-Related Tension Index, and Generalized Anxiety Disorder-7. Self-esteem was positively associated with adaptive perfectionism ($r=0.555$, $p<0.001$) and negatively associated with maladaptive perfectionism ($r=-0.307$, $p<0.001$) and anxiety ($r=-0.431$, $p<0.001$). Performance pressure was strongly associated with anxiety ($r=0.660$, $p<0.001$) but not with self-esteem ($r=0.049$, $p>0.05$). Regression analysis showed that adaptive perfectionism and performance pressure were positively associated with self-esteem, while anxiety and maladaptive perfectionism were negatively associated with self-esteem ($p<0.001$). In conclusion, adaptive perfectionism is associated with higher self-esteem, whereas maladaptive perfectionism and anxiety negatively impact self-esteem.

Key words: perfectionism, self-esteem, mental health, occupational stress, information technology.

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Introduction

Perfectionism is a multidimensional construct encompassing both adaptive striving and maladaptive self-critical evaluation, with important implications for psychological well-being.¹ In high-demand occupational settings such as the information technology (IT) sector, sustained performance pressure may exacerbate maladaptive perfectionistic tendencies and contribute to anxiety and impaired self-esteem.² Self-esteem, reflecting an individual's evaluation of self-worth, is closely linked to both perfectionism and emotional distress.³ The software industry represents a uniquely demanding occupational environment characterized by rapid technological change, continuous skill upgrading, tight deadlines, prolonged screen exposure, global competition, and high performance expectations.⁴ These occupational demands may predispose software professionals to maladaptive perfectionistic tendencies, chronic stress, anxiety, and disturbances in self-esteem. Although perfectionism and occupational stress have been studied in healthcare workers, students, and corporate employees, comparatively fewer studies have specifically examined these constructs among software professionals, particularly in the Indian context. Furthermore, limited evidence is available regarding the simultaneous interaction of adaptive perfectionism, maladaptive perfectionism, performance pressure, anxiety, and self-esteem within this population. Understanding these interrelationships may provide insight into psychological vulnerabilities and resilience factors in high-demand

technology-based professions. Therefore, the present study aimed to examine the associations among perfectionism, performance pressure, anxiety, and self-esteem, and to identify predictors of self-esteem among software professionals.

Materials and Methods

Study design and setting

This study employed a cross-sectional observational design to examine the relationship between perfectionism, performance pressure, and self-esteem among software professionals. The study was conducted between November 2025 and April 2026 using online data collection methods across multiple organizational and professional networks. The study design adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies.⁴

Ethical considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee prior to the initiation of data collection (Approval No.: MMC/IEC/2022/2945/164/2025). All procedures involving human participants were conducted in accordance with the ethical standards of the institutional ethics committee and the principles outlined in the World Medical Association Declaration of Helsinki (1975), as revised in 2013.⁵

Electronic informed consent was obtained from all participants prior to enrollment in the study. Participation was voluntary, and participants were informed of their right to decline participation or withdraw at any time without any professional or personal consequences.

Confidentiality and anonymity were strictly maintained. No personally identifiable information, such as names, employee identification numbers, or organizational identifiers, was collected. All data were stored in a password-protected database accessible only to the investigators.

Selection and description of participants

Participants included software professionals currently employed in the IT sector. Individuals were eligible for inclusion if they were aged 18 years or above, currently employed in software or IT-related roles, able to comprehend and respond to English-language questionnaires, and provided informed consent to participate in the study. Participants were excluded if they submitted incomplete questionnaire responses or were not currently employed in software-related professions. The source population comprised software professionals recruited through professional networks and organizational communication channels.

Operational definition and grouping of variables

Participants reported their current job designation as part of the sociodemographic assessment. Due to substantial heterogeneity and variability in individual job titles across software organizations, designations were grouped into broader occupational categories to facilitate meaningful statistical comparisons and maintain adequate subgroup sample sizes. The categories were defined pragmatically based on level of professional responsibility and organizational hierarchy:

- entry-level: junior roles such as associates, analysts, and early-career professionals;
- mid-level: roles involving moderate responsibility, such as senior associates, consultants, and team leads;
- senior management: positions involving supervisory or managerial responsibilities, such as managers and senior managers;
- leadership: executive-level roles, including directors and senior leadership positions.

Years of professional experience were similarly categorized into ≤ 2 years, 3-5 years, 6-10 years, and >10 years to reflect early-career, developing, experienced, and senior professional stages commonly observed in the software industry. These categorizations were intended to improve interpretability and allow comparisons across career stages while ensuring sufficient numbers within each subgroup for inferential analyses.

Psychometric scale scores, including Almost Perfect Scale-Revised (APS-R), Rosenberg Self-Esteem Scale (RSES), Job-Related Tension Index (JRTI), and the Generalized Anxiety Disorder-7 (GAD-7) scores, were analyzed as continuous variables rather than categorized into severity groups in order to preserve statistical power and avoid loss of information associated with arbitrary cutoffs. Sensitivity checks using alternative grouping approaches for occupational variables yielded similar overall patterns of findings.

Sample collection procedures

Software professionals were approached through professional networking platforms, organizational mailing lists, workplace communication channels, and online professional groups involving

employees from diverse IT-related organizations. Recruitment was not restricted to a single company or workplace setting, and participants represented professionals working across different organizational environments, including small-scale firms, mid-sized companies, and larger corporate settings. However, detailed organizational identifiers and geographical locations were intentionally not collected to preserve participant anonymity and confidentiality. Information regarding the study objectives and procedures was disseminated electronically. Interested individuals were screened for eligibility based on predefined criteria.

A convenience sampling technique was used for recruitment during the study period. Eligible participants were invited to complete a structured questionnaire *via* a secure Google Forms link shared through professional networks and online communication platforms. The online questionnaire included a participant information sheet explaining the purpose and nature of the study, followed by an electronic informed consent form and instructions for completion.

During the data collection period, a total of 250 software professionals were approached through professional and organizational networks. Of these, 230 individuals met the eligibility criteria and were invited to participate. Fifteen eligible individuals either declined participation or did not complete the informed consent process. Among the remaining participants, incomplete questionnaire responses were excluded during data screening, resulting in a final analyzable sample of 215 participants. A participant recruitment flow diagram based on STROBE recommendations has been provided to improve transparency of the recruitment and inclusion process. While convenience sampling enabled efficient data collection, it may limit the generalizability of findings to the broader population of software professionals.

Tools used

Data were collected using a structured questionnaire consisting of sociodemographic variables and standardized psychometric instruments:

- i. APS-R – perfectionism was assessed using the APS-R, a multi-dimensional scale measuring adaptive (standards) and maladaptive (discrepancy) perfectionism. The scale consists of 23 items rated on a Likert scale, with higher scores indicating greater perfectionism;⁶
- ii. RSES – self-esteem was measured using the RSES, a 10-item scale assessing global self-esteem. Items are rated on a 4-point Likert scale, with higher scores indicating higher self-esteem. Negatively worded items were reverse-coded prior to analysis;³
- iii. JRTI – performance pressure was assessed using the JRTI, a 15-item instrument measuring job-related stress and role conflict. Higher scores reflect greater perceived job-related tension;⁷
- iv. GAD-7 – anxiety was assessed using the GAD-7, a 7-item self-report scale measuring the severity of generalized anxiety symptoms. Items are rated on a 4-point scale, with higher scores indicating greater anxiety severity.⁸

All psychometric instruments used in this study, including the APS-R, RSES, JRTI, and the GAD-7, are established measures available for use in non-commercial academic research. These instruments were used in accordance with their respective usage guidelines and without modification to their original structure.

Statistics

All statistical analyses were performed using SPSS Statistics (Version 26.0) (IBM, Armonk, NY, USA).⁹ Data were screened for

completeness prior to analysis, and only cases with complete responses were included (n=215), with no missing data requiring imputation.

Descriptive statistics were computed to summarize the data. Continuous variables were expressed as mean ± standard deviation, along with minimum and maximum values, while categorical variables were presented as frequencies and percentages. Measures of central tendency and dispersion were used to describe the distribution of scale scores.¹⁰

Normality of continuous variables was assessed using the Shapiro-Wilk test and the Kolmogorov-Smirnov test, along with inspection of skewness and kurtosis values.¹¹ Given the relatively large sample size (n>200), minor deviations from normality were considered acceptable based on the central limit theorem, and parametric tests were applied.¹²

Internal consistency reliability of the scales was evaluated using Cronbach’s α coefficient, with values ≥0.70 considered acceptable.¹³ Item-total correlations were examined to assess the contribution of individual items to the overall scale reliability.

Associations between continuous variables were examined using Pearson’s correlation coefficient (r), which measures the strength and direction of linear relationships between variables.¹⁴ All correlation coefficients were reported with corresponding exact p-values.

To identify predictors of self-esteem, multiple linear regression analysis was performed. Standardized β coefficients, unstandardized coefficients (B), and their standard errors were reported. Model fit was evaluated using the coefficient of determination (R²) and adjusted R². Multicollinearity among predictors was assessed using the variance inflation factor and tolerance values.¹⁵ Confidence intervals (95%) for regression coefficients were considered in interpretation where applicable.

Group differences based on gender were examined using the independent samples t-test, which compares mean differences between two independent groups.¹⁶ Differences across designation levels were analyzed using one-way analysis of variance (ANOVA), followed by post-hoc comparisons where appropriate.¹⁷ Homogeneity of variance was assessed using Levene’s test.

Effect sizes were calculated to quantify the magnitude of differences. Cohen’s d was used for t-tests, with values of 0.2, 0.5, and 0.8 indicating small, medium, and large effects, respectively.¹⁸ For ANOVA, eta squared (η²) was computed, with values of 0.01, 0.06, and 0.14 representing small, medium, and large effects.^{18,19}

All statistical tests were two-tailed, and exact p-values are reported. A threshold of p<0.05 was considered statistically significant.

Table 1. Sociodemographic characteristics of participants (n=215).

Variable	Category	n (%)
Gender	Male	109 (50.7)
	Female	106 (49.3)
Designation	Entry-level	37 (17.2)
	Mid-level	101 (47.0)
	Senior management	69 (32.1)
	Leadership	8 (3.7)
Years of experience	≤2 years	7 (3.3)
	3-5 years	18 (8.4)
	6-10 years	97 (45.1)
	>10 years	93 (43.3)

Results

Sociodemographic characteristics

A total of 215 participants were included in the analysis. Participant recruitment and inclusion are summarized in Figure 1. The sample comprised 109 males (50.7%) and 106 females (49.3%). The majority of participants were employed at the mid-level (47.0%) and had 6-10 years of work experience (45.1%). Detailed sociodemographic characteristics are presented in Table 1.

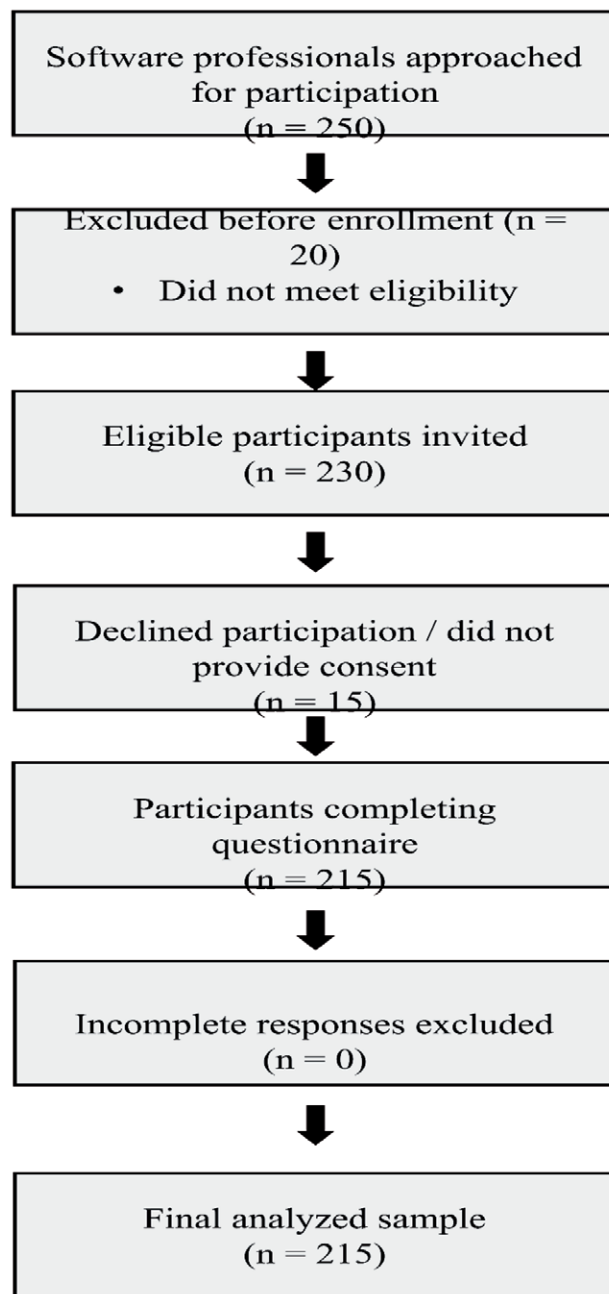


Figure 1. STROBE flow diagram showing participant recruitment, eligibility assessment, exclusions, consent process, and final inclusion in the study according to STROBE recommendations.

Descriptive statistics

The mean age of participants was 36.41±7.66 years. The mean scores for APS-R standards, APS-R discrepancy, self-esteem (RSES), performance pressure (JRTI), and anxiety measured using GAD-7 are summarized in Table 2.

Correlation analysis

Pearson correlation analysis demonstrated that self-esteem was positively associated with adaptive perfectionism ($r=0.555$, $p=0.000$) and negatively associated with maladaptive perfectionism ($r=-0.307$, $p=0.000$) and GAD-7 scores ($r=-0.431$, $p=0.000$). No significant association was observed between performance pressure

and self-esteem ($r=0.049$, $p=0.477$). Performance pressure showed a strong positive correlation with GAD-7 scores ($r=0.660$, $p=0.000$) and maladaptive perfectionism ($r=0.550$, $p=0.000$). Detailed correlations are shown in Table 3.

Regression analysis

Multiple linear regression analysis revealed that adaptive perfectionism ($\beta=0.458$, $p=0.000$) and performance pressure ($\beta=0.437$, $p=0.000$) were positively associated with self-esteem. The model explained 59.1% of the variance in self-esteem ($R^2=0.591$), whereas anxiety ($\beta=-0.489$, $p=0.000$) and maladaptive perfectionism ($\beta=-0.339$, $p=0.000$) were negatively associated with self-esteem after adjustment for other study variables. The regression model is presented in Table 4.

Gender differences

The independent samples *t*-test showed that males had significantly higher adaptive perfectionism scores than females (mean difference: 3.11, $p=0.000$, Cohen's $d=0.51$). Females reported higher GAD-7 scores than males (mean difference: -0.21, $p=0.044$, Cohen's $d=0.28$). No significant gender differences were observed for maladaptive perfectionism, self-esteem, or performance pressure. Detailed results are presented in Table 5.

The observed gender difference in adaptive perfectionism demonstrated a moderate effect size (Cohen's $d=0.51$), suggesting a practically meaningful difference between males and females, whereas the effect size for anxiety differences was small (Cohen's $d=0.28$).

Table 2. Descriptive statistics of study variables (n=215).

Variable	Mean±standard deviation	Range
Age (years)	36.41±7.66	24-56
APS-R standards	41.33±6.31	28-49
APS-R discrepancy	37.23±12.39	17-84
RSES total	3.15±0.60	1.20-4.00
JRTI total	2.23±0.69	1.00-4.07
GAD-7 total	0.87±0.77	0.00-3.00

Values are presented as mean±standard deviation with minimum-maximum range. APS-R, Almost Perfect Scale-Revised; RSES, Rosenberg Self-Esteem Scale; JRTI, Job-Related Tension Index; GAD-7, Generalized Anxiety Disorder-7.

Table 3. Pearson correlation matrix of study variables among software professionals.

Variable	1	2	3	4	5
1. RSES	—	0.049 ($p=0.477$)	-0.431 ($p<0.001$)	0.555 ($p<0.001$)	-0.307 ($p<0.001$)
2. JRTI		—	0.660 ($p<0.001$)	0.265 ($p<0.001$)	0.550 ($p<0.001$)
3. GAD-7			—	-0.075 ($p=0.272$)	0.578 ($p<0.001$)
4. APS-R standards				—	0.163 ($p=0.017$)
5. APS-R discrepancy					—

Values are Pearson correlation coefficients (*r*). All tests are two-tailed. APS-R, Almost Perfect Scale-Revised; RSES, Rosenberg Self-Esteem Scale; JRTI, Job-Related Tension Index; GAD-7, Generalized Anxiety Disorder-7.

Table 4. Multiple linear regression analysis examining factors associated with self-esteem (Rosenberg Self-Esteem Scale total).

Predictor	B	SE	β	95% CI	p
JRTI Total	0.380	0.057	0.437	0.268 to 0.492	<0.001
GAD-7 Total	-0.386	0.053	-0.489	-0.490 to -0.282	<0.001
APS-Standards	0.044	0.005	0.458	0.034 to 0.054	<0.001
APS-Discrepancy	-0.017	0.003	-0.339	-0.023 to -0.011	<0.001

APS-R, Almost Perfect Scale-Revised; RSES, Rosenberg Self-Esteem Scale; JRTI, Job-Related Tension Index; GAD-7, Generalized Anxiety Disorder-7. Dependent variable: RSES total. B, unstandardized regression coefficient; SE, standard error; β , standardized regression coefficient; CI, confidence interval. Model statistics: $R^2=0.591$; adjusted $R^2=0.583$.

Table 5. Gender differences in study variables.

Variable	Male mean±SD	Female mean±SD	Mean difference	p	Cohen's d
APS-R standards	42.86±4.43	39.75±7.49	3.11	<0.001	0.51
APS-R discrepancy	38.75±10.65	35.66±13.83	3.09	0.067	—
RSES	3.16±0.62	3.14±0.59	0.02	0.826	—
JRTI	2.19±0.65	2.28±0.74	-0.10	0.312	—
GAD-7	0.77±0.70	0.98±0.82	-0.21	0.044	0.28

APS-R, Almost Perfect Scale-Revised; RSES, Rosenberg Self-Esteem Scale; JRTI, Job-Related Tension Index; GAD-7, Generalized Anxiety Disorder-7; SD, standard deviation. Values are presented as mean±SD. The mean difference is calculated as male – female; Cohen's *d* is reported for statistically significant comparisons.

Differences across designation

One-way ANOVA revealed a statistically significant difference in maladaptive perfectionism across designation levels ($F=3.819$, $p=0.011$, $\eta^2=0.051$). No significant differences were observed for adaptive perfectionism, self-esteem, performance pressure, or GAD-7 scores across designation levels. These findings are summarized in Table 6.

The effect size for differences in maladaptive perfectionism across designation levels was small to moderate ($\eta^2=0.051$), indicating that occupational designation accounted for a modest proportion of variance in maladaptive perfectionism.

Discussion

Summary of key findings

This study examined the relationships among perfectionism, performance pressure, anxiety, and self-esteem in software professionals. Adaptive perfectionism (standards) was positively associated with self-esteem, whereas maladaptive perfectionism (discrepancy) and anxiety were negatively associated. Performance pressure showed no direct correlation with self-esteem but was strongly related to anxiety and maladaptive perfectionism. In regression analysis, adaptive perfectionism and performance pressure demonstrated positive independent associations with self-esteem, while anxiety and maladaptive perfectionism demonstrated negative independent associations, partially supporting the study hypotheses.

Interpretation in the context of existing evidence

The positive association between adaptive perfectionism and self-esteem aligns with prior research suggesting that striving for high standards may promote competence and self-worth.^{20,21} In contrast, maladaptive perfectionism has consistently been linked to psychological distress and negative self-evaluation.²² The strong association between anxiety and lower self-esteem is also well supported in the literature.²³

Interestingly, performance pressure demonstrated no significant bivariate association with self-esteem but emerged as a positive predictor in the multivariable regression model after controlling for anxiety and maladaptive perfectionism. This pattern may represent a statistical suppression effect, wherein the inclusion of closely related negative emotional variables allows the potentially adaptive components of performance pressure to become more apparent. One possible explanation may be understood through the challenge stressor-hindrance stressor framework proposed in occupational stress research.²⁴ According to this model, certain forms of work-related pressure may function as “challenge stressors,” which, despite being demanding, can promote motivation, achievement, perceived com-

petence, and professional growth when individuals possess adequate coping resources. In contrast, stressors perceived as uncontrollable or threatening may function as “hindrance stressors,” contributing to emotional exhaustion, anxiety, and impaired self-evaluation.²⁴

In the present study, performance pressure appeared to coexist with both adaptive and maladaptive psychological processes. At the bivariate level, its strong positive correlation with anxiety and maladaptive perfectionism may have obscured any beneficial association with self-esteem. However, after statistically controlling for these distress-related variables, the residual component of performance pressure may reflect achievement-oriented engagement, goal-directed motivation, or perceived occupational competence, thereby demonstrating a positive association with self-esteem. Perfectionism has also been conceptualized as a transdiagnostic process influencing emotional well-being across multiple psychological domains, highlighting the complex interplay between perfectionistic tendencies, anxiety, and self-esteem.²⁵ This interpretation is further supported by occupational health literature suggesting that moderate and manageable levels of occupational challenge may enhance self-efficacy, mastery experiences, professional identity, and adaptive workplace functioning in high-performance environments.²⁶

These findings have important practical implications. Workplace interventions should not aim to eliminate performance expectations entirely, but rather distinguish between motivating challenge-related demands and psychologically harmful stressors. Organizational strategies promoting supportive supervision, realistic goal-setting, psychological flexibility, and adaptive coping may help software professionals experience performance demands as growth-oriented rather than threatening. Simultaneously, interventions targeting maladaptive perfectionism and anxiety may reduce the negative psychological impact associated with excessive self-critical evaluation.²⁷

Although several statistically significant associations were identified, interpretation of effect sizes provides additional insight into their practical relevance. The moderate effect size observed for gender differences in adaptive perfectionism suggests that these differences may have meaningful implications in workplace settings rather than representing only statistical significance. Similarly, the small-to-moderate effect of designation on maladaptive perfectionism indicates that occupational hierarchy may contribute modestly to perfectionistic tendencies in software professionals. These findings highlight the importance of considering both statistical and practical significance when interpreting occupational mental health research.

Strengths and limitations

Strengths

This study used validated psychometric instruments and included multiple interrelated constructs, allowing for a comprehensive

Table 6. Analysis of variance (designation differences).

Variable	F	p	η^2
APS-R standards	0.662	0.576	—
APS-R discrepancy	3.819	0.011	0.051
RSES	1.205	0.309	—
JRTI	1.136	0.335	—
GAD-7	0.751	0.523	—

APS-R, Almost Perfect Scale-Revised; RSES, Rosenberg Self-Esteem Scale; JRTI, Job-Related Tension Index; GAD-7, Generalized Anxiety Disorder-7; η^2 , effect size (eta squared). Post hoc analysis was performed using Tukey’s test.

analysis. The relatively large sample size enhanced statistical power, and the inclusion of both correlational and regression analyses strengthened the interpretability of findings.

Limitations

The present study has several limitations. First, the cross-sectional design precludes conclusions regarding temporal relationships or causality among perfectionism, performance pressure, anxiety, and self-esteem. Although regression analyses identified variables independently associated with self-esteem, causal interpretations cannot be inferred from the present findings. Second, convenience sampling may have introduced selection bias, as participants who chose to respond may differ systematically from the broader population of software professionals in terms of psychological characteristics, occupational stress, or motivation to participate. Although participants were recruited through multiple professional and organizational networks, the absence of detailed organizational and geographical data limits assessment of the representativeness of the sample. Variations in workplace culture, company size, job demands, leadership style, remote work patterns, and regional work environments may therefore not have been fully captured. This may reduce the generalizability of the findings. Third, all variables were assessed using self-report instruments, increasing the possibility of response bias, social desirability bias, and common method variance. Additionally, potentially important confounding variables such as personality traits, coping styles, organizational culture, workplace support systems, job insecurity, and work-life balance were not directly measured and may have influenced the observed associations. Finally, categorization of occupational variables may have reduced variability within groups and may not fully capture nuanced differences across specific job roles.

Implications and mechanisms

The findings suggest that internal cognitive factors, particularly maladaptive perfectionism and anxiety, play a substantial role in shaping self-esteem among software professionals. However, these psychological processes likely operate within broader occupational and organizational contexts. Contemporary occupational health literature emphasizes that workplace mental health outcomes are influenced not only by individual cognitive styles but also by organizational climate, managerial support, work autonomy, workload distribution, and work-life balance.^{26,27} In technology-driven professions, additional stressors such as rapid technological adaptation, remote or hybrid work environments, prolonged screen exposure, continuous availability expectations, and job insecurity may further intensify perfectionistic tendencies and performance-related anxiety.

The increasing normalization of remote work in the software industry may also contribute to blurred boundaries between professional and personal life, thereby amplifying self-imposed performance expectations and difficulty disengaging from work-related demands. Organizational cultures emphasizing constant productivity, competitiveness, and flawless performance may reinforce maladaptive perfectionistic cognitions, particularly among employees with pre-existing vulnerability toward self-critical evaluation. Conversely, supportive workplace environments characterized by psychological safety, constructive feedback, flexible work policies, and realistic performance expectations may buffer against anxiety and impaired self-esteem.

These findings have important implications for workplace mental health interventions. At the organizational level, interventions

promoting supportive supervision, healthy workload management, flexible scheduling, and employee well-being initiatives may help reduce maladaptive stress responses. Training programs aimed at fostering psychological resilience, adaptive coping, emotional regulation, and self-compassion may be particularly beneficial in high-performance professional environments. At the individual level, cognitive-behavioral interventions targeting maladaptive perfectionism, fear of failure, and excessive self-criticism may improve psychological well-being and self-esteem.²⁸ Such approaches may help employees reinterpret performance demands in a more adaptive and sustainable manner.

Controversies and novel insights

A notable finding was the positive predictive role of performance pressure in regression analysis despite its non-significant bivariate association with self-esteem. This raises questions about the dual role of performance pressure as both a stressor and a potential motivator. Such findings contribute to ongoing debates regarding whether occupational stress is uniformly detrimental or context-dependent.

Future research directions

Future studies should employ longitudinal and multicentric designs to establish causal relationships and improve generalizability. Further research is needed to examine contextual occupational variables such as organizational support, remote work patterns, work-life balance, leadership style, workplace culture, and job autonomy, which may moderate the relationship between perfectionism, anxiety, and self-esteem. Exploration of mediational pathways, particularly the role of anxiety and coping strategies in linking perfectionism with self-esteem, is also warranted. Additionally, intervention-based studies evaluating organizational wellness programs and cognitive-behavioral approaches targeting maladaptive perfectionism may provide clinically and occupationally relevant insights.

Conclusions

Adaptive perfectionism is associated with higher self-esteem, whereas maladaptive perfectionism and anxiety are linked to poorer self-esteem among software professionals. Performance pressure demonstrated complex associations with self-esteem that appeared to vary after accounting for anxiety and maladaptive perfectionism. These findings underscore the importance of addressing maladaptive cognitive patterns and anxiety in workplace mental health strategies to enhance psychological well-being in high-demand professional environments.

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Informed consent: informed consent was obtained electronically from all participants prior to their inclusion in the study.

Participant consent for publication: participants provided consent for the use of anonymized study data for publication purposes in the informed consent form.

Availability of data and materials: the datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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