

Social Problem-Solving Dimensions and Avoidance Coping with Academic Stress: an Archival Sex-Stratified Study of Master's Students in Tehran

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Abstract:

Academic stress is a persistent challenge in higher education, and students' responses to stressful academic demands may be related to how they habitually appraise and approach problems. This archival cross-sectional correlational study examined associations between five dimensions of social problem solving—positive problem orientation, negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style—and avoidance coping in 382 master's students (218 women and 164 men) enrolled at public universities in Tehran during the 2011–2012 academic year. Social problem-solving dimensions were measured with a researcher-developed/adapted questionnaire prepared with reference to the Social Problem-Solving Inventory–Revised (SPSI-R), whereas avoidance coping was assessed using the Coping Inventory for Stressful Situations (CISS). Because several variables deviated from normality, Spearman rank-order correlations were reported separately for women and men. Avoidance problem-solving style was strongly associated with avoidance coping among women ($\rho = .968, p < .001$) and men ($\rho = .860, p < .001$). Negative problem orientation was similarly associated with avoidance coping among women ($\rho = .964, p < .001$) and men ($\rho = .975, p < .001$). Rational problem solving and positive problem orientation were not significantly associated with avoidance coping in either group; impulsivity/carelessness was non-significant among men, whereas the corresponding female coefficient could not be treated as valid because the archived coefficient and p-value were internally inconsistent. No formal between-sex comparison of correlations was available. The findings therefore support an association between maladaptive problem orientation/avoidant problem-solving tendencies and avoidance coping in this historical student sample, but the unusually large coefficients, incomplete psychometric documentation, and archival nature of the data require cautious interpretation.

Keywords: social problem solving; avoidance coping; academic stress; negative problem orientation; archival study; master's students

INTRODUCTION

Academic stress remains a major concern in higher education because persistent academic demands can affect students' learning, motivation, psychological well-being, and broader adjustment. Contemporary evidence indicates that academic stress is not merely an episodic response to examinations; rather, it can arise from sustained workload, uncertainty, performance expectations, time pressure, and perceived mismatch between demands and available coping resources (Pascoe et al., 2020; Barbayannis et al., 2022). Recent reviews further show that university students employ a wide range of coping responses, but the conceptualization and measurement of coping remain heterogeneous across studies, which complicates direct comparison of findings and the design of targeted interventions (Waterhouse & Samra, 2026).

Within this context, the way students interpret and respond to problems may be as important as the objective demands they face. Social problem solving is commonly conceptualized as a self-directed cognitive, emotional, and behavioral process through which individuals attempt to identify effective responses to problems encountered in everyday life (D'Zurilla et al., 2004). The revised social problem-solving model distinguishes two problem-orientation dimensions—positive problem orientation and negative problem orientation—and three problem-solving styles: rational problem solving, impulsivity/carelessness, and avoidance (D'Zurilla et al., 2002). Positive problem orientation and rational problem solving are generally considered adaptive, whereas negative problem orientation, impulsivity/carelessness, and avoidance are considered maladaptive or dysfunctional patterns.

Recent research has renewed attention to the relevance of social problem-solving processes in university adjustment. In a college sample, de la Fuente et al. (2023) found that social problem-solving ability contributed to psychological adjustment beyond academic motivation, with negative problem orientation emerging as a particularly important correlate of depressive symptoms and reduced life satisfaction. A person-centered study of Hungarian secondary-school and university students also demonstrated that combinations of problem orientation, rationality, impulsivity, and avoidance form distinct social problem-solving profiles that differ in self-efficacy (Fejes et al., 2023). More recent work has continued to examine problem solving and coping jointly in university settings and has emphasized the need to consider sex/gender-related patterns rather than assuming a homogeneous student population (de la Fuente et al., 2025).

Coping theory provides a complementary perspective. Endler and Parker's multidimensional approach distinguishes task-oriented, emotion-oriented, and avoidance-oriented coping (Endler & Parker, 1990). Avoidance coping involves cognitive or behavioral attempts to disengage from a stressor or divert attention away from it. Although short-term disengagement may sometimes reduce immediate distress, habitual avoidance can interfere with active management of academic demands. Contemporary studies show that coping with academic stress varies across students and contexts, and that passive or avoidant responses may coexist with lower adjustment or poorer stress management (Joseph et al., 2021; Paralkar & Knutson, 2023).

Conceptually, avoidance problem solving and avoidance coping are related but non-identical constructs. Avoidance problem solving concerns how individuals approach the process of resolving a problem—for example, postponing, waiting for a problem to resolve itself, or transferring responsibility—whereas avoidance coping concerns the broader management of stress through disengagement or distraction. Negative problem orientation represents a further mechanism through which students may perceive problems as threats, doubt their ability to solve them, or become frustrated when difficulties arise. These cognitive appraisals may increase the likelihood of disengagement when academic demands are experienced as difficult or uncontrollable.

Despite the theoretical relevance of these constructs, relatively few studies have examined all five social problem-solving dimensions specifically in relation to avoidance coping while also presenting associations separately for women and men. The present manuscript reports an archival dataset of master's students from public universities in Tehran. The data were collected during the 2011–2012 academic year; accordingly, the results should be interpreted as evidence from that historical university context rather than as an estimate of current student behavior. The 2026 revision updates the conceptual framing, reporting transparency, and interpretation without fabricating or replacing unavailable original study information.

The primary objective was to examine the association between avoidance coping and each of the five dimensions of social problem solving separately among women and men. On theoretical grounds, the strongest positive associations were expected for avoidance style and negative problem orientation. Rational problem solving and positive problem orientation were expected to show weaker or inverse associations. Sex-stratified coefficients were reported to characterize patterns within each group; they were not treated as evidence of statistically significant between-sex differences because no formal comparison of independent correlations was available.

2. METHODS

2.1 Study Design and Participants

The study used an archival cross-sectional, descriptive-correlational design. The target population comprised 56,748 male and female master's students enrolled in daytime programs at public universities in Tehran during the 2011–2012 academic year, according to the original study records. A sample of 382 students was determined using the Krejcie–Morgan sample-size approach (Krejcie & Morgan, 1970) and was allocated proportionally by sex. The final sample included 218 women (57.1%) and 164 men (42.9%). The current manuscript is based on the aggregate results preserved in the archival materials; the original item-level dataset was not supplied for the present revision and therefore no unreported statistics were reconstructed.

2.2 Sampling and Academic Fields

The archival documentation describes the sampling procedure as stratified sampling. The sample represented several broad academic fields: engineering and technical disciplines ($n = 134$, 35.1%), basic

sciences (n = 115, 30.1%), language studies (n = 52, 13.6%), arts (n = 42, 11.0%), and medical fields (n = 39, 10.2%). Participant age and additional sociodemographic characteristics were not available in the supplied archival materials. This limits assessment of sample comparability and external validity.

2.3 Measures

Social problem solving. Five dimensions were assessed in alignment with the Social Problem-Solving Inventory–Revised (SPSI-R): positive problem orientation, negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style (D’Zurilla et al., 2002). Importantly, the archival documentation indicates that the study used a researcher-developed/adapted questionnaire prepared with reference to the SPSI-R and with guidance from expert faculty members; it should therefore not be represented as administration of the standardized SPSI-R itself. The available records do not report the number of items, subscale scoring ranges, internal-consistency coefficients, or a formal validation procedure for the present sample. These omissions constrain psychometric interpretation of the reported associations.

Avoidance coping. Avoidance coping was assessed using the Coping Inventory for Stressful Situations (CISS), based on the multidimensional coping framework developed by Endler and Parker (1990). The CISS distinguishes task-oriented, emotion-oriented, and avoidance-oriented coping; the present report focuses on the avoidance-coping dimension. The archival materials do not provide the number of administered items, scoring details, or a reliability estimate for the avoidance subscale in this sample. These measurement details should be recovered from the original study records if available.

2.4 Statistical Analysis

Descriptive statistics were calculated for the study variables. Normality was evaluated in the original analysis using the Kolmogorov–Smirnov test. Because several variables deviated from normality, Spearman’s rank-order correlation coefficient (ρ) was used to examine monotonic associations between avoidance coping and each social problem-solving dimension. Correlations were reported separately for women (n = 218) and men (n = 164), with two-sided statistical significance evaluated at $\alpha = .05$. Values recorded as $p = .000$ in the archived output are reported conventionally as $p < .001$. No multiplicity correction and no formal between-sex comparison of independent correlations (e.g., Fisher-type comparison) were documented in the original analysis; therefore, the sex-stratified coefficients are interpreted within groups and numerical differences between women and men are described only cautiously.

2.5 Ethical Reporting

The archival materials available for this revision do not contain an ethics approval identifier, institutional review board statement, or sufficiently detailed consent documentation. These details must be checked against the original study records before submission. In keeping with research-integrity principles, no approval code, consent procedure, or institutional statement has been inferred or invented in the present manuscript.

3. RESULTS

3.1 Participant Characteristics

The study included 382 master’s students. Women constituted 57.1% of the sample and men 42.9%. Engineering/technical and basic-science students together represented approximately two-thirds of the sample.

Characteristic	n	%
Women	218	57.1
Men	164	42.9
Engineering and technical	134	35.1
Basic sciences	115	30.1
Language	52	13.6
Arts	42	11.0
Medicine	39	10.2

Table 1. Participant characteristics.

3.2 Descriptive Statistics

Among the five reported social problem-solving dimensions, avoidance style had the highest mean ($M = 3.5673$), followed closely by negative problem orientation ($M = 3.5509$). Rational problem solving had the lowest mean ($M = 3.2127$). The mean avoidance-coping score was 3.00 ($SD = 0.205$). Because item-level scoring documentation was unavailable, these values are reported descriptively without additional scale-standardization claims.

Variable	Mean	SD	Minimum	Maximum
Positive problem orientation	3.4271	0.64848	1.50	5.00
Negative problem orientation	3.5509	0.58980	2.25	5.00
Rational problem solving	3.2127	0.60499	1.81	5.00
Impulsivity/carelessness style	3.2488	0.54600	1.80	4.50
Avoidance style	3.5673	0.60907	1.40	5.00
Avoidance coping	3.0000	0.205	2.00	4.00

Table 2. Descriptive statistics for study variables.

3.3 Associations Between Social Problem Solving and Avoidance Coping

Avoidance style showed a very strong positive association with avoidance coping in both women ($\rho = .968$, $p < .001$) and men ($\rho = .860$, $p < .001$). Negative problem orientation was also very strongly associated with avoidance coping in women ($\rho = .964$, $p < .001$) and men ($\rho = .975$, $p < .001$). Rational problem solving and positive problem orientation were not significantly associated with avoidance coping in either group, and impulsivity/carelessness was non-significant among men ($\rho = .068$, $p = .386$). For women, the archived impulsivity/carelessness result cannot be validly interpreted because the recorded coefficient and p-value are internally inconsistent; the contradictory pair is therefore not presented as a valid coefficient in Table 3.

Social problem-solving dimension	Women ρ	Women p	Men ρ	Men p
Avoidance style	.968	< .001	.860	< .001
Rational problem solving	.049	.470	.005	.950
Impulsivity/carelessness style	NR†	NR†	.068	.386
Positive problem orientation	.054	.425	.118	.131
Negative problem orientation	.964	< .001	.975	< .001

Table 3. Spearman correlations between avoidance coping and social problem-solving dimensions, stratified by sex.

† The archival source reports $\rho = -.30$ together with $p = .662$ for women. With $n = 218$, this coefficient/p-value combination is internally inconsistent. To avoid reproducing a contradictory statistic as valid, the female impulsivity/carelessness result is marked NR (not reportable) pending verification against the original SPSS output or raw data.

Descriptively, the avoidance-style coefficient was larger among women than men, whereas the negative-problem-orientation coefficient was slightly larger among men. These numerical differences must not be interpreted as statistically established sex differences because the archived analysis did not include a formal comparison of independent correlations.

4. DISCUSSION

The present archival study examined how five social problem-solving dimensions were associated with avoidance coping among female and male master's students. Two patterns were consistently evident in the preserved results: avoidance problem-solving style and negative problem orientation were each strongly and positively associated with avoidance coping in both groups. Rational problem solving and positive problem orientation were not significantly associated with avoidance coping in either group. The male impulsivity/carelessness result was non-significant, whereas the corresponding female result remains unresolved because the archived coefficient/p-value pair is internally inconsistent.

The association between avoidance style and avoidance coping is theoretically coherent. Although the two constructs belong to different measurement frameworks, both involve disengagement from difficult situations. In the social problem-solving model, avoidance style reflects procrastination, passivity, and attempts to shift responsibility for solving a problem. In the coping framework, avoidance coping reflects behavioral or cognitive disengagement from stress. A student who repeatedly postpones academic problem solving may therefore be more likely to manage academic stress through distraction or withdrawal rather than direct engagement. Contemporary work on student coping reinforces the importance of distinguishing active and avoidant responses, particularly because coping repertoires vary widely across contexts and measurement systems (Waterhouse & Samra, 2026).

The strong relationship between negative problem orientation and avoidance coping is also consistent with current evidence concerning the role of maladaptive cognitive appraisal. Negative problem orientation involves perceiving problems as threats, doubting one's problem-solving competence, becoming easily frustrated, and expecting unfavorable outcomes. In a more recent university sample, negative problem orientation was a particularly important predictor of poorer psychological adjustment (de la Fuente et al., 2023). The present findings suggest that one pathway linking negative problem orientation to maladjustment may be an increased tendency to disengage from academic stressors rather than approach them directly.

The non-significant associations for rational problem solving and positive problem orientation require a more cautious interpretation. Adaptive problem-solving capacities do not necessarily function as simple opposites of avoidance coping. Students may possess rational problem-solving skills while still relying on avoidance in specific stressful situations, and positive problem orientation may influence broader adjustment outcomes rather than the use of a single coping style. Recent research on social problem-solving profiles similarly suggests that combinations of orientations and styles may be more informative than isolated dimensions considered independently (Fejes et al., 2023).

The sex-stratified pattern is potentially informative but should not be overinterpreted. The avoidance-style correlation was numerically higher among women, whereas the negative-problem-orientation correlation was numerically higher among men. Recent university research continues to identify sex/gender-related variation in problem solving and coping, but the patterns are context dependent rather than universal (de la Fuente et al., 2025). Because the present source analysis did not statistically compare the two independent correlations, the observed coefficient differences are descriptive only.

The magnitude of the significant correlations requires particular methodological caution. Coefficients ranging from .860 to .975 are unusually large for theoretically distinct self-report psychological constructs. Such values may reflect substantial conceptual proximity, but they may also be influenced by overlapping item content, common-method variance, scoring procedures, or data-processing error. Because the original item-level dataset was not available for this revision, discriminant validity and scoring accuracy could not be re-tested. The coefficients should therefore be verified against the original data and statistical output before submission, and the present findings should be interpreted as associations rather than evidence that the constructs are interchangeable or causally linked.

From an applied perspective, the findings identify hypotheses for future intervention research rather than demonstrating intervention effectiveness. Programs for postgraduate students could examine whether helping students reframe academic problems as manageable challenges, identify controllable elements of stressors, generate solution alternatives, and implement specific action plans reduces avoidant coping over time. Such effects would require prospective or experimental evaluation and cannot be inferred from the present cross-sectional correlations (Joseph et al., 2021; Paralkar & Knutson, 2023; Waterhouse & Samra, 2026).

5. IMPLICATIONS FOR HIGHER EDUCATION

Three cautious implications follow from the observed associations. First, student-support services may consider assessing both perceived academic stress and habitual approaches to problem solving when

designing support, while recognizing that the present archival data do not establish causal pathways. Students who repeatedly postpone action or appraise problems as threatening may warrant closer assessment of coping patterns, but individualized conclusions should not be drawn from group-level correlations alone.

Second, problem-solving components can be evaluated within academic-skills, counseling, or orientation programs. Structured exercises in problem definition, goal setting, generation of alternatives, decision making, and implementation are plausible targets for intervention research, but their effectiveness should be tested prospectively rather than assumed from the present correlational findings.

Third, sex-stratified analyses may help reveal heterogeneity in student coping, but group differences should be tested directly and interpreted without stereotyping. In this dataset, the separate coefficients describe within-group associations only; they do not establish statistically significant female–male differences.

6. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Several limitations materially constrain interpretation. First, the cross-sectional design does not permit causal inference. The analysis cannot establish whether maladaptive problem-solving orientations precede avoidance coping, whether repeated avoidance reinforces negative problem orientation, or whether both are influenced by third variables such as anxiety, perceived control, academic self-efficacy, or broader contextual stressors.

Second, the data were collected during the 2011–2012 academic year. University environments, assessment practices, digital learning, and student-support systems have changed substantially since then. The results should therefore be treated as historical evidence from that cohort and setting, not as a direct estimate of current coping patterns among master's students in Tehran.

Third, the study relies on self-report measures and is vulnerable to common-method variance. The archival documentation does not provide internal-consistency estimates, full item-level scoring information, or complete validation evidence for the researcher-developed/adapted social problem-solving questionnaire in this sample, and it does not report reliability for the CISS avoidance dimension. These omissions are especially important given the magnitude of the observed correlations.

Fourth, the extremely high correlations involving avoidance coping warrant verification. If the original raw data can be recovered, reliability analysis, inspection for overlapping or duplicated items, confirmatory factor analysis, and assessment of discriminant validity should be undertaken. The female impulsivity/carelessness coefficient should also be checked directly against the original SPSS output because the archived coefficient and p-value are internally inconsistent.

Finally, the sample was limited to master's students in public universities in Tehran, participant age and several sociodemographic variables were unavailable, and the original item-level dataset was not supplied for the present revision. Generalization to other degree levels, private universities, contemporary cohorts, or other cultural and educational contexts should therefore be made cautiously. Future studies should use current multisite samples, fully documented validated instruments, longitudinal designs, direct tests of group differences, and transparent psychometric reporting.

7. CONCLUSION

In this archival sex-stratified study of master's students, avoidance problem-solving style and negative problem orientation were strongly associated with avoidance coping in both women and men. Rational problem solving and positive problem orientation were not significantly associated with avoidance coping; impulsivity/carelessness was non-significant among men, while the corresponding female statistic could not be validated from the archived coefficient/p-value pair. The findings are consistent with clustering of maladaptive problem appraisal, avoidant problem-solving tendencies, and avoidant coping, but the cross-sectional design precludes causal inference. The age of the data, incomplete psychometric documentation, lack of original item-level data for re-analysis, and unusually large correlations require verification and cautious interpretation. Contemporary replication with fully documented measures and explicit statistical comparison across groups is warranted.

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