

Component-Specific Associations of Perceived Public Stigma With Professional Help-Seeking Intention Across Anxiety and Depressive Symptom Groups in Chinese University Students

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Abstract

Background

Mental health-related stigma is associated with lower professional help-seeking, but components of perceived public stigma may differ in their relevance across symptom states.

Methods

This cross-sectional study included 4875 Chinese university students classified into elevated anxiety symptoms ($n = 393$), elevated depressive symptoms without elevated anxiety ($n = 271$), and low symptoms ($n = 4211$) based on the GAD-7 and PHQ-9. Measurement analyses supported two empirical PDD components: perceived low social acceptance and role inclusion (PDD_F1) and perceived social devaluation and exclusion consequences (PDD_F2). Group-specific path models examined associations of both components, self-stigma, and depressive symptoms with professional help-seeking intention.

Results

PDD_F2 was the only stigma indicator significantly associated with lower help-seeking intention in all three groups ($\beta = -.108$ to $-.150$). PDD_F1 showed a small negative association only in the low-symptom group, whereas self-stigma showed no significant independent association. The PDD_F2–help-seeking path did not differ significantly across groups, $\Delta\chi^2(2) = 0.285$, $p = .867$. School-clustering analyses preserved the direction and magnitude of this association, although precision decreased in the elevated depressive-symptom group under the most conservative correction.

Conclusions

Perceived social devaluation and exclusion consequences showed the most consistent association with lower professional help-seeking intention across symptom groups. Concerns about social evaluation, exclusion, and role consequences may warrant attention in efforts to promote professional help-seeking among university students.

1. Background

Although effective treatments are available for common mental health problems such as anxiety and depression, a substantial gap remains between mental health need and entry into professional care. Many people do not begin treatment promptly after the onset of a mental disorder (Wang et al., 2007). In China, this gap is also shaped by service accessibility, recognition of need, and willingness to seek professional help (Patel et al., 2016). Among university students, stigma, negative views of counseling, discomfort with emotional disclosure, and limited mental health literacy may hinder access to professional services (Shea et al., 2019). Recent reviews indicate that stigma, trust in professionals, and service accessibility remain important barriers to professional help-seeking among young people, and that actual help-seeking among university students with mental health problems remains less common than help-seeking intention (Huff et al., 2024; Zhao et al., 2025). Identifying factors associated with lower help-seeking intention is therefore important for understanding why mental health needs do not translate into formal service contact. Although

intention does not necessarily lead to behavior, it reflects an individual's perceived likelihood of seeking professional help (White et al., 2018)

Mental health-related stigma has long been considered an important barrier to professional help-seeking, but stigma is not a unitary construct. It includes social stereotypes, prejudice, and discrimination, as well as individuals' perceptions of these evaluations, expectations of discrimination, and self-stigma that develops when negative social meanings are applied to the self (Brohan et al., 2010; Link, 2001). Systematic reviews generally support a negative association between stigma and mental health help-seeking, but findings vary across forms of stigma, help-seeking outcomes, and contexts (Clement et al., 2015; Schnyder et al., 2017). Thus, a more informative question is whether different forms of stigma have different relevance to help-seeking decisions.

One prominent account emphasizes the internalization of social stigma. Individuals may accept negative stereotypes about mental illness and apply them to themselves, leading to shame, alienation, self-devaluation, and social withdrawal (Ritsher et al., 2003). In a Chinese psychiatric sample, self-stigma partly accounted for cross-sectional associations of perceived public stigma with self-esteem, depressive symptoms, and quality of life (Kao et al., 2016). This does not, however, establish self-stigma as a necessary proximal pathway between perceived public stigma and professional help-seeking. Modified labeling theory suggests that expectations of devaluation, rejection, and discrimination may themselves be associated with concealment, avoidance, and social withdrawal, even without fully developed negative self-evaluations (Link et al., 1989). Whether perceived public stigma and mental illness self-stigma show similar associations with professional help-seeking intention therefore remains an empirical question.

A further unresolved issue concerns heterogeneity within perceived public stigma. The Perceived Devaluation–Discrimination Scale (PDD) assesses beliefs about how people with mental illness are viewed and treated by others. Its items cover social acceptance, trust, and role inclusion, as well as more specific consequences such as employment discrimination, rejection in close relationships, and reduced credibility. Previous studies suggest that the empirical structure of the PDD is not fully stable and that different item contents may form distinguishable components (Interian et al., 2010; Yin et al., 2019). Treating the PDD as a single indicator may therefore obscure differences in how its content relates to help-seeking. A more precise test therefore requires establishing the PDD structure and cross-group comparability before examining the help-seeking relevance of its empirical components.

The stigma–help-seeking association may also depend on current symptom status. Psychological distress increases the potential need for professional support but may also alter sensitivity to mental illness labels, social evaluation, and stigma-related consequences. Current anxiety and depressive symptoms have shown different associations with forms of stigma (Calear et al., 2017; Grant et al., 2016). Fox et al. (2018) found that depressive symptom severity altered the association between anticipated stigma and subsequent mental health service use. Recent research among Chinese university students also suggests that depression may modify help-seeking-related cognitive processes, including the association between mental health beliefs and help-seeking self-stigma (W. Chen & Dang, 2026). These findings suggest that symptom status may be an important boundary condition, yet few studies have directly tested whether the same stigma–help-seeking associations remain consistent across different screening-defined symptom states.

This question is particularly relevant among Chinese university students, although cultural explanations should not be reduced to the assumption that collectivism simply produces greater stigma. Cultural stigma theory emphasizes whether a label threatens identities, relationships, and social positions that matter in a particular social environment—what Yang et al. (2007) termed “what matters most.” In China, a mental illness label may be linked to face concerns, family evaluation, relationships, and social roles, involving not only internal shame but also judgments about social acceptance, credibility, and future role opportunities (Yang & Kleinman, 2008). Research with Chinese populations also suggests that cultural beliefs, social evaluation, and help-seeking norms may shape professional help-seeking decisions (S. X. Chen & Mak, 2008; Choi & Miller, 2014). Distinguishing self-stigma from different forms of perceived public stigma may therefore clarify whether help-seeking-related stigma operates mainly through negative meanings incorporated into the self-concept or also through expectations about social evaluation, relationships, and role consequences.

Against this background, the present study examined perceived public stigma, mental illness self-stigma, and professional psychological help-seeking intention across screening-defined symptom states among Chinese university students. We first examined the empirical structure and cross-group comparability of the PDD. We then compared the independent associations of its empirical components and mental illness self-stigma with help-seeking intention and tested whether these associations differed across symptom groups. Interactions involving self-stigma and cross-sectional indirect associations through depressive symptoms were examined as supplementary analyses. The study aimed to identify which stigma-related beliefs were most consistently associated with lower professional help-seeking intention and whether these associations were maintained across symptom states.

2. Methods

2.1 Study Design and Participants

This cross-sectional study used an online survey to examine associations among perceived public stigma, self-stigma, depressive symptoms, and professional psychological help-seeking intention among Chinese university students. Because the study focused on stigma-related processes before entry into formal mental health care, a large screening sample was used to include students with elevated anxiety or depressive symptoms who had not necessarily received a clinical diagnosis or professional mental health services.

Participants were recruited from 12 universities in China, including vocational and technical, teacher-training, finance and business, science and engineering, comprehensive, arts, public security, and health-related institutions. A total of 6,442 questionnaires were collected. Eligible participants were 18–22 years old and enrolled in Years 1–4 of an undergraduate or junior-college program in a Chinese higher-education institution. After eligibility and response-quality screening, 4,875 questionnaires were retained for analysis. The final sample included 1,442 men (29.6%) and 3,433 women (70.4%).

Participants were classified into three mutually exclusive screening-defined symptom groups based on the Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9): an elevated anxiety-symptom group (GAD-7 ≥ 10 , $n = 393$), an elevated depressive-symptom group without elevated anxiety (PHQ-9 ≥ 10 and GAD-7 < 10 , $n = 271$), and a low-symptom group (PHQ-9 < 10 and GAD-7 < 10 , $n = 4,211$) (Kroenke et

al., 2001; Spitzer et al., 2006). Participants in the elevated anxiety-symptom group were not excluded on the basis of elevated PHQ-9 scores, allowing the natural co-occurrence of anxiety and depressive symptoms to be retained. These groups were defined by self-report screening measures and should not be interpreted as clinical diagnostic categories. Because the elevated depressive-symptom group was defined partly by PHQ-9 ≥ 10 , within-group variation in PHQ-9 scores was expected to be restricted.

2.2 Ethical Approval

and Informed Consent

The data were collected as part of a doctoral research project approved by the Universiti Utara Malaysia Research Ethics Committee (approval no. UUM/CAS/AHSGS/E-5; September 30, 2025). All participants read the study information and provided electronic informed consent before beginning the survey. Responses were anonymous, no directly identifying information was collected, and participation was voluntary. Participants could withdraw before submitting the questionnaire.

2.3 Measures

2.3.1 Anxiety and Depressive Symptoms

Anxiety symptoms were assessed using the seven-item Generalized Anxiety Disorder scale (GAD-7), which measures the severity of generalized anxiety symptoms during the previous two weeks (Spitzer et al., 2006). Items are rated from 0 to 3, producing a total score of 0–21, with higher scores indicating more severe anxiety symptoms. The Chinese version of the GAD-7 was used, and a total score of ≥ 10 was used to identify elevated anxiety symptoms.

Depressive symptoms were assessed using the nine-item Patient Health Questionnaire (PHQ-9), which measures depressive symptom severity during the previous two weeks (Kroenke et al., 2001). Items are rated from 0 to 3, yielding a total score of 0–27, with higher scores indicating more severe depressive symptoms. The Chinese version was used. PHQ-9 scores were used both to define the elevated depressive-symptom group and as a continuous depressive-symptom measure in subsequent path models.

Because both the GAD-7 and PHQ-9 contributed to symptom-group classification, within-group reliability estimates may be affected by range restriction. Group-specific Cronbach's α coefficients were therefore not used as the primary psychometric evidence for these measures.

2.3.2 Perceived Public Stigma

Perceived public stigma was assessed using the Perceived Devaluation–Discrimination Scale (PDD). Originally developed by Link and colleagues, the PDD measures individuals' perceptions of how people with mental illness are viewed and treated by the general public (Link et al., 1989).

The present study used the 12-item version included in the Chinese Ministry of Health's national mental health survey materials for assessing public knowledge and attitudes toward mental illness. Its content is broadly consistent with the original PDD, although the Chinese version uses a five-point Likert response format (General Office of the Ministry of Health, 2010; Yin et al., 2014; Hu et al., 2012). Items cover social acceptance,

trust, employment, close relationships, social roles, and perceived credibility. All items were scored in the same direction, with higher scores indicating greater perceived public devaluation or discrimination.

Because previous studies have suggested that the factor structure of the PDD may vary across samples and cultural contexts (Interian et al., 2010; Yin et al., 2014), we did not assume a single total-score structure. Its empirical factor structure and measurement comparability across symptom groups were examined before the structural analyses, and subsequent scoring was based on these measurement analyses.

2.3.3 Self-Stigma

Self-stigma was assessed using the 24-item version of the Internalized Stigma of Mental Illness Scale (ISMI-24), excluding the stigma resistance subscale. The original ISMI was developed to assess the internalization of negative meanings associated with mental illness (Ritsher et al., 2003). The 24-item version used here covered alienation, stereotype endorsement, discrimination experience, and social withdrawal, with higher scores indicating greater self-stigma.

Because the sample consisted of university students identified through screening and not all participants had experienced a diagnosed mental disorder, a standardized hypothetical scenario was presented before the ISMI items:

Regardless of whether you have actually had a similar experience, please imagine that you have been diagnosed by a professional with a common mental disorder, such as depressive disorder or an anxiety disorder. Imagine yourself in this situation and respond to the following statements according to how you think you might feel, think, or behave. When answering, consider: 'If this happened to me, to what extent would this statement describe me?'

The measurement structure of the ISMI-24 was examined before the main path analyses. Results supported the use of the mean of all 24 items as an overall self-stigma score. Cronbach's α ranged from .965 to .967 across the three symptom groups.

2.3.4 Professional Psychological Help-Seeking Intention

Professional psychological help-seeking intention was assessed using the three-item Mental Help-Seeking Intention Scale (MHSIS), developed by Hammer and Spiker (Hammer & Spiker, 2018). The scale assesses the likelihood of seeking professional psychological help when experiencing psychological distress. Items are rated on a seven-point scale, with higher scores indicating stronger professional help-seeking intention.

Because an established Chinese version of the MHSIS was not available, the scale underwent translation, back-translation, and cultural adaptation before formal data collection. A pilot assessment was also conducted to evaluate item comprehensibility and preliminary reliability. The mean of the three items was used in subsequent analyses. Internal consistency was high across symptom groups ($\alpha = .927-.969$).

2.4 Data Screening and Variable Preparation

Data screening addressed both participant eligibility and response quality. Responses from participants who did not meet the age, year-of-study, or higher-education enrollment criteria were excluded. We also excluded questionnaires completed in less than 60 seconds, those showing clear repetitive responding across

extended Likert-type item sets, and those showing repeated inconsistencies across positively and negatively worded items. After screening, 4,875 complete questionnaires were retained, with no item-level missing data.

GAD-7 and PHQ-9 total scores were used. Based on the PDD measurement analyses, two observed component scores were calculated. PDD_F1 was the mean of PDD1, PDD2, PDD3, PDD4, PDD8, and PDD10, whereas PDD_F2 was the mean of PDD5, PDD6, PDD7, PDD9, PDD11, and PDD12. ISMI and professional help-seeking intention (HELP) were calculated as the means of their 24 and three items, respectively.

All continuous predictors included in the path models were mean-centered within symptom group. Interaction terms were computed as products of the centered variables: PDD_F1×ISMI and PDD_F2×ISMI.

2.5 Statistical Analyses

Analyses were conducted using IBM SPSS Statistics 26, Mplus 8.3, IBM SPSS Amos 24, and R 4.6.1. All tests were two-sided with $\alpha = .05$. Given the cross-sectional design, structural paths were interpreted as concurrent statistical associations rather than causal effects.

First, the structure of the PDD was examined using exploratory and confirmatory factor analyses for ordered categorical items with the weighted least squares mean- and variance-adjusted estimator (WLSMV). Multi-group models were then used to examine configural, loading, and threshold invariance across the three symptom groups. Model comparisons considered WLSMV DIFFTEST results together with changes in CFI, RMSEA, and SRMR. Because wording effects were a potential alternative explanation for the PDD structure, competing wording-method models were also estimated. For the ISMI-24, one-factor, correlated four-factor, and second-order models were compared using WLSMV, followed by tests of configural invariance across groups to evaluate the appropriateness of an overall composite score.

Descriptive statistics, Cronbach's α coefficients, and Pearson zero-order correlations were then calculated. In each symptom group, an observed-variable path model was estimated with HELP as the outcome and PDD_F1, PDD_F2, ISMI, and PHQ as simultaneous predictors. Models were estimated using maximum likelihood. Unstandardized coefficients, standard errors, 95% confidence intervals, standardized coefficients, and explained variance were reported. To visualize the main estimates, standardized path coefficients and 95% bias-corrected confidence intervals were additionally obtained from 5,000 bootstrap resamples.

Because participants were nested within 12 universities, school-clustering sensitivity analyses were conducted. School fixed effects were first added to the group-specific models. Cluster-robust CR2 variance estimation with Satterthwaite small-sample degrees of freedom was then used to assess the sensitivity of the focal associations to the small and uneven number of university clusters.

To examine whether structural paths differed across symptom groups, multi-group path models were estimated. Starting from a freely estimated model, the unstandardized PDD_F1→HELP, PDD_F2→HELP, ISMI→HELP, and PHQ→HELP paths were each constrained to equality across the three groups. Constrained models were compared with the freely estimated model using chi-square difference tests. A significant deterioration in model fit was interpreted as evidence of between-group differences in the corresponding path.

Two sets of supplementary analyses were conducted. First, PDD_F1 $\times$ ISMI and PDD_F2 $\times$ ISMI interaction terms were added to the primary models to test whether self-stigma moderated the associations between the PDD components and help-seeking intention. Second, supplementary path models were estimated in which PDD_F1, PDD_F2, and ISMI predicted PHQ, and PDD_F1, PDD_F2, ISMI, and PHQ simultaneously predicted HELP. Bias-corrected 95% confidence intervals based on 5,000 bootstrap samples were used to estimate the cross-sectional indirect association between ISMI and HELP through PHQ. Because all variables were measured at the same time point, this indirect association was interpreted as a statistical association rather than evidence of causal mediation.

3. Results

3.1 Preliminary Measurement Analyses

The measurement structures of the PDD and ISMI-24 were examined before the primary path analyses to determine how the composite variables should be scored.

Ordinal exploratory factor analysis of the PDD identified two clear item clusters. PDD1, PDD2, PDD3, PDD4, PDD8, and PDD10 loaded primarily on the first factor, whereas PDD5, PDD6, PDD7, PDD9, PDD11, and PDD12 loaded primarily on the second factor. The correlation between the two factors was close to zero. Based on item content, the first factor mainly reflected social acceptance, trust, and role inclusion and was labeled perceived low social acceptance and role inclusion (PDD_F1). The second factor included perceptions of personal failure, exclusion from employment and close relationships, restrictions on social roles, and reduced credibility and was labeled perceived social devaluation and exclusion consequences (PDD_F2).

Confirmatory factor analysis showed poor fit for the one-factor model, whereas the 12-item two-factor model showed substantial improvement. Fit improved further after allowing three theoretically interpretable within-factor residual correlations (RMSEA = .103, CFI = .944, TLI = .926, SRMR = .049; Table 1). Although RMSEA remained high, the overall pattern did not support treating all 12 PDD items as a single homogeneous construct.

Competing models including either a positive- or negative-wording method factor did not recover a coherent general factor that accounted for all 12 items. In both models, one set of items primarily defined the general factor, whereas the other was largely accounted for by the wording factor. Because item content was closely aligned with wording direction, the present data could not clearly separate substantive content differences from wording effects. PDD_F1 and PDD_F2 were therefore treated as empirically distinguishable but substantively provisional components. A 10-item model excluding PDD8 and PDD10 did not provide sufficient improvement to justify item deletion, and all 12 items were retained.

Multi-group analyses showed the same basic two-factor configuration across the three symptom groups. Although WLSMV DIFFTESTs were significant when loading and threshold constraints were imposed, changes in CFI, RMSEA, and SRMR were small (Table 2). These results provided practical support for proceeding with cross-group comparisons, while not implying strict measurement invariance. Detailed EFA loadings, group-specific CFA results, residual correlations, and wording-method models are reported in Supplementary Tables S1–S5.

For the ISMI-24, the correlated four-factor model showed good fit (RMSEA = .047, CFI = .990, TLI = .989, SRMR = .019), with high correlations among the four first-order factors ($r = .903-.974$). The second-order model also fitted well (RMSEA = .050, CFI = .989, TLI = .988, SRMR = .020), and standardized loadings of the four first-order factors on the higher-order self-stigma factor ranged from .949 to .997. The same four-factor configuration was supported across the three symptom groups. The mean of all 24 ISMI items was therefore used as an overall self-stigma score in subsequent analyses. Full results are provided in Supplementary Tables S5–S6.

Based on these measurement analyses, PDD_F1 and PDD_F2 were entered as separate observed components in the structural models, whereas the ISMI-24 was represented by an overall self-stigma score.

3.2 Descriptive Statistics, Reliability, and Zero-Order Correlations

Descriptive statistics and internal consistency coefficients are presented in Table 3. Internal consistency was acceptable to high across groups, with Cronbach's α ranging from .773 to .853 for PDD_F1, .749 to .802 for PDD_F2, .965 to .967 for ISMI, and .927 to .969 for HELP.

Zero-order correlations are shown in Table 4. PDD_F2 was negatively correlated with HELP in all three symptom groups ($r = -.107$ to $-.142$). Associations of PDD_F1 and ISMI with HELP were weaker and less consistent; both were significantly but weakly negatively correlated with HELP only in the low-symptom group. ISMI was positively correlated with PHQ scores in all three groups ($r = .127-.240$). Overall, PDD_F2 showed the most consistent bivariate association with help-seeking intention. Its adjusted association and possible between-group differences were examined in the primary path models.

3.3 Main Path Models Predicting Professional Help-Seeking Intention

The same primary path model was estimated in each symptom group, with PDD_F1, PDD_F2, ISMI, and PHQ simultaneously predicting professional psychological help-seeking intention (HELP; Table 5).

PDD_F2 was the only stigma variable significantly associated with lower HELP in all three groups. Standardized coefficients were $\beta = -.118$ in the elevated anxiety-symptom group, $\beta = -.150$ in the elevated depressive-symptom group without elevated anxiety, and $\beta = -.108$ in the low-symptom group. In contrast, PDD_F1 showed a small negative association only in the low-symptom group ($\beta = -.062$, $p < .001$), and ISMI was not independently associated with HELP in any group.

PHQ was negatively associated with HELP in the elevated anxiety-symptom group ($\beta = -.126$, $p = .015$) and the low-symptom group ($\beta = -.141$, $p < .001$), but not in the elevated depressive-symptom group without elevated anxiety ($\beta = -.084$, $p = .175$). The models explained 3.0%, 2.9%, and 4.2% of the variance in HELP in the elevated anxiety, elevated depressive symptoms without elevated anxiety, and low-symptom groups, respectively. Standardized estimates and their bootstrap confidence intervals are shown in Fig. 1.

Sensitivity analyses focused on the PDD_F2–HELP association. School-level intraclass correlations for HELP ranged from .004 to .052 across groups. After school fixed effects were added, PDD_F2 estimates remained

close to those from the primary models and remained statistically significant in all three groups. Under the more conservative CR2–Satterthwaite correction, the unstandardized estimates were unchanged in direction and magnitude ($B = -0.339, -0.419, \text{ and } -0.324$). The association remained significant in the elevated anxiety-symptom group ($p = .023$) and the low-symptom group ($p = .017$), whereas precision was reduced in the elevated depressive-symptom group without elevated anxiety ($p = .078$). Thus, adjustment for school clustering did not materially alter the estimated direction or magnitude of the PDD_F2 association, although inference in the smaller elevated-depression group was sensitive to the limited number of school clusters. Full results are reported in Supplementary Table S7.

3.4 Cross-Group Equality-Constraint Tests

To examine whether the primary structural associations differed across symptom groups, the unstandardized PDD_F1→HELP, PDD_F2→HELP, ISMI→HELP, and PHQ→HELP paths were constrained to equality across the three groups, one at a time, and compared with the freely estimated model (Table 6).

Constraining the PDD_F2→HELP path to equality did not significantly worsen model fit, $\Delta\chi^2(2) = 0.285, p = .867$. Together with the similar direction and magnitude of the group-specific estimates, this result was consistent with a broadly similar PDD_F2–HELP association across symptom groups, although it does not demonstrate that the underlying effects were identical.

Equality constraints on the PDD_F1→HELP and ISMI→HELP paths also did not significantly worsen fit, $\Delta\chi^2(2) = 0.453, p = .797$ and $\Delta\chi^2(2) = 1.107, p = .575$, respectively. The PHQ→HELP constraint also fell short of statistical significance, $\Delta\chi^2(2) = 5.618, p = .060$. Because the elevated depressive-symptom group without elevated anxiety was defined partly by $\text{PHQ-9} \geq 10$, this comparison should be interpreted in light of restricted within-group variation in PHQ scores. Overall, none of the four primary paths showed statistically significant between-group heterogeneity.

3.5 Supplementary Models

Supplementary interaction models provided no consistent evidence that self-stigma moderated the associations of PDD_F1 or PDD_F2 with help-seeking intention (Supplementary Table S8). Neither interaction was significant in the elevated anxiety-symptom or elevated depressive-symptom group without elevated anxiety. Although both interactions were statistically significant in the low-symptom group, the effects were small, positive, and together increased explained variance by only 0.4% ($\Delta R^2 = .004$).

Associations between the stigma variables and depressive symptoms showed greater between-group heterogeneity (Supplementary Table S9). The ISMI→PHQ, PDD_F1→PHQ, and PDD_F2→PHQ paths all differed significantly across groups. In contrast, the HELP equation remained consistent with the primary models: PDD_F2 was negatively associated with HELP in all three groups, whereas ISMI showed no significant direct association.

The cross-sectional indirect association between ISMI and HELP through PHQ was significant in the elevated anxiety-symptom and low-symptom groups, but not in the elevated depressive-symptom group without elevated anxiety (Supplementary Table S10). These indirect associations were small and did not show a

consistent pattern across symptom states. Given the concurrent measurement of all variables, they should not be interpreted as evidence of temporal or causal mediation.

Table 1
Fit Indices for Competing Measurement Models of the Perceived Devaluation–Discrimination Scale

Model	$\chi^2(df)$	RMSEA	CFI	TLI	SRMR
One-factor 12-item model	24236.204 (54)	.303	.478	.362	.172
Two-factor 12-item model	3526.681 (53)	.116	.925	.907	.054
Two-factor, 12-item model with correlated residuals	2645.613 (50)	.103	.944	.926	.049
General factor + positive-wording method factor	3848.165 (48)	.127	.918	.887	.053
General factor + negative-wording method factor	2211.578 (48)	.096	.953	.936	.033
Two-factor 10-item model	2024.741 (32)	.113	.953	.935	.047
Note. PDD = Perceived Devaluation–Discrimination Scale; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker–Lewis index; SRMR = standardized root mean square residual. All models were estimated using the weighted least squares mean- and variance-adjusted estimator (WLSMV) for ordered categorical indicators. The retained 12-item two-factor model included three within-factor residual correlations: PDD1 with PDD2, PDD8 with PDD10, and PDD11 with PDD12. In the wording-method models, all 12 items loaded on a general factor, while either the positively worded/reverse-keyed items (PDD1, PDD2, PDD3, PDD4, PDD8, and PDD10) or the negatively worded/directly keyed items (PDD5, PDD6, PDD7, PDD9, PDD11, and PDD12) additionally loaded on an orthogonal wording factor. The 10-item model excluded PDD8 and PDD10. Because these models differ in parameterization and, for the 10-item model, item composition, fit indices are presented descriptively rather than as conventional nested-model comparisons. All model χ^2 tests were significant at $p < .001$. Boldface indicates the model retained for subsequent scoring and structural analyses.					

Table 2
Multi-Group Measurement Invariance Tests for the Two-Factor PDD Model Across Screening-Defined Symptom Groups

Model	$\chi^2(df)$	RMSEA	CFI	TLI	SRMR	ΔCFI	$\Delta RMSEA$	$\Delta SRMR$	WLSMV DIFFTEST p
Configural invariance	2733.816 (150)	.103	.948	.932	.051	—	—	—	—
Metric invariance	2689.244 (170)	.095	.950	.941	.051	+ .002	–.008	.000	< .001
Threshold invariance	2686.068 (238)	.080	.951	.959	.052	+ .001	–.015	+ .001	< .001
Note. PDD = Perceived Devaluation–Discrimination Scale; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker–Lewis index; SRMR = standardized root mean square residual. PDD items were treated as ordered categorical indicators and estimated using WLSMV. Changes in CFI, RMSEA, and SRMR are reported relative to the immediately preceding model. Although WLSMV DIFFTESTs were statistically significant, changes in approximate fit indices were small and did not indicate deterioration in model fit, supporting sufficient measurement comparability across the three screening-defined symptom groups for subsequent structural comparisons.									

Table 3

Descriptive Statistics and Internal Consistency of Study Variables Across Screening-Defined Symptom Groups

Variable	Elevated anxiety-symptom group (n = 393) M (SD)	α	Elevated depressive-symptom group without elevated anxiety (n = 271) M (SD)	α	Low-symptom group (n = 4,211) M (SD)	α
GAD-7	12.94 (2.97)	—	6.70 (1.89)	—	2.99 (2.68)	—
PHQ-9	13.44 (5.26)	—	12.05 (2.46)	—	3.30 (3.04)	—
PDD_F1	3.01 (0.59)	.773	2.87 (0.65)	.817	2.83 (0.65)	.853
PDD_F2	3.04 (0.59)	.749	3.04 (0.66)	.802	2.93 (0.62)	.796
ISMI	1.87 (0.75)	.967	1.76 (0.70)	.965	1.35 (0.56)	.967
HELP	3.55 (1.70)	.927	3.71 (1.85)	.955	4.48 (1.84)	.969
Note. GAD-7 = Generalized Anxiety Disorder-7; PHQ-9 = Patient Health Questionnaire-9; PDD_F1 = perceived low social acceptance and role inclusion; PDD_F2 = perceived social devaluation and exclusion consequences; ISMI = self-stigma; HELP = professional psychological help-seeking intention. GAD-7 and PHQ-9 are total scores; PDD_F1, PDD_F2, ISMI, and HELP are item-mean scores. Internal consistency coefficients are not reported for GAD-7 and PHQ-9 because both measures contributed to screening-group classification and within-group estimates are susceptible to range restriction.						

Table 4

Zero-Order Correlations Among Depressive Symptoms, Stigma Variables, and Help-Seeking Intention Across Screening-Defined Symptom Groups

Variable pair	Elevated anxiety-symptom group	Elevated depressive-symptom group without elevated anxiety	Low-symptom group
PHQ-PDD_F1	.135**	.230**	.073**
PHQ-PDD_F2	-.049	-.010	.076**
PHQ-ISMI	.240**	.127*	.208**
PHQ-HELP	-.126*	-.084	-.159**
PDD_F1-PDD_F2	-.163**	.057	-.072**
PDD_F1-ISMI	.208**	.239**	.182**
PDD_F1-HELP	-.036	-.046	-.069**
PDD_F2-ISMI	.166**	.249**	.150**
PDD_F2-HELP	-.107*	-.142*	-.118**
ISMI-HELP	-.063	-.019	-.081**
Note. Values are within-group Pearson zero-order correlations. PHQ = depressive symptoms; PDD_F1 = perceived low social acceptance and role inclusion; PDD_F2 = perceived social devaluation and exclusion consequences; ISMI = self-stigma; HELP = professional psychological help-seeking intention. Because PHQ contributed to the definition of the elevated depressive-symptom and low-symptom groups, correlations involving PHQ should be interpreted in light of within-group range restriction. * $p < .05$. ** $p < .01$			

Table 5

Main Path Models Predicting Professional Help-Seeking Intention Across Screening-Defined Symptom Groups

Group	Predictor	B	SE	95% CI	β	p	R ²
Elevated anxiety-symptom group	PDD_F2→HELP	-0.339	0.149	[- 0.631, - 0.047]	-.118	.022	.030
	PDD_F1→HELP	-0.107	0.151	[- 0.403, 0.189]	-.037	.479	
	ISMI→HELP	-0.012	0.121	[- 0.249, 0.225]	-.005	.922	
	PHQ→HELP	-0.041	0.017	[- 0.074, - 0.008]	-.126	.015	
Elevated depressive-symptom group without elevated anxiety	PDD_F2→HELP	-0.419	0.173	[- 0.758, - 0.080]	-.150	.016	.029
	PDD_F1→HELP	-0.076	0.181	[- 0.431, 0.279]	-.027	.673	
	ISMI→HELP	0.093	0.170	[- 0.240, 0.426]	.035	.585	
	PHQ→HELP	-0.063	0.047	[- 0.155, 0.029]	-.084	.175	
Low-symptom group	PDD_F2→HELP	-0.324	0.046	[- 0.414, - 0.234]	-.108	< .001	.042
	PDD_F1→HELP	-0.176	0.044	[- 0.262, - 0.090]	-.062	< .001	
	ISMI→HELP	-0.080	0.052	[- 0.182, 0.022]	-.024	.125	
	PHQ→HELP	-0.086	0.009	[- 0.104, - 0.068]	-.141	< .001	

Note. HELP = professional psychological help-seeking intention; PDD_F1 = perceived low social acceptance and role inclusion; PDD_F2 = perceived social devaluation and exclusion consequences; ISMI = self-stigma; PHQ = depressive symptoms. B = unstandardized coefficient; SE = standard error; β = standardized coefficient. R² refers to the full model within each screening-defined symptom group. Predictors were entered simultaneously and continuous predictors were group-mean centered before model estimation. Confidence intervals are model-based 95% confidence intervals for the unstandardized coefficients.

Table 6

Cross-Group Equality-Constraint Tests for Paths Predicting Professional Psychological Help-Seeking Intention

Constrained path	Elevated anxiety B	Elevated depressive-symptom group without elevated anxiety B	Low symptoms B	$\Delta\chi^2$	df	p
PDD_F1→HELP	-0.107	-0.076	-0.176	0.453	2	.797
PDD_F2→HELP	-0.339	-0.419	-0.324	0.285	2	.867
ISMI→HELP	-0.012	0.093	-0.080	1.107	2	.575
PHQ→HELP	-0.041	-0.063	-0.086	5.618	2	.060

Note. PDD_F1 = perceived low social acceptance and role inclusion; PDD_F2 = perceived social devaluation and exclusion consequences; ISMI = self-stigma; PHQ = depressive symptoms; HELP = professional psychological help-seeking intention. B values are unstandardized coefficients from the freely estimated group-specific models. Equality constraints were imposed on the corresponding unstandardized path coefficients across the three screening-defined symptom groups, one path at a time. A nonsignificant χ^2 difference test indicates that imposing equality did not significantly worsen model fit and should not be interpreted as evidence that the coefficients are identical.

4. Discussion

This study compared the associations of two components of perceived public stigma and mental illness self-stigma with professional psychological help-seeking intention across screening-defined symptom states among Chinese university students. The most consistent finding was that perceived social devaluation and exclusion consequences (PDD_F2) were associated with lower help-seeking intention in the elevated anxiety-symptom, elevated depressive-symptom without elevated anxiety, and low-symptom groups. The associations were small but similar in direction and magnitude, and cross-group tests did not indicate significant heterogeneity. School-clustering sensitivity analyses generally preserved this pattern, although precision was reduced in the elevated depressive-symptom group under the most conservative correction. In contrast, perceived low social acceptance and role inclusion (PDD_F1) showed a weaker association, and mental illness self-stigma (ISMI) was not independently associated with help-seeking intention in any group. Supplementary analyses also provided no evidence of a consistent interaction between perceived public stigma and self-stigma or a cross-group pattern of indirect associations linking ISMI, depressive symptoms, and help-seeking intention. Together, these findings suggest that different forms of stigma-related beliefs may not have the same relevance to professional help-seeking.

4.1 Perceived Social Devaluation and Exclusion Consequences and Help-Seeking

PDD_F2 primarily captured beliefs about specific social consequences that may accompany a mental health or mental illness label, including being viewed as a personal failure, exclusion from employment or close relationships, reduced credibility, and restrictions on important social roles. Compared with broader perceptions of social acceptance and role inclusion, these consequence-focused beliefs may be more closely related to the social costs that individuals consider when deciding whether to enter professional care.

This interpretation is consistent with modified labeling theory. The theory proposes that people develop beliefs about how mental illness labels are socially evaluated and treated and that expectations of devaluation, rejection, and discrimination may be associated with concealment, avoidance, and social withdrawal, even when these social meanings have not been fully incorporated into negative self-evaluations (Link et al., 1989). Seeking professional psychological help is also not always experienced as a purely private health decision. Entering formal care may make mental health concerns more salient in interpersonal or institutional contexts, and individuals may therefore consider not only whether treatment is useful but also the possible social consequences of being identified with a mental health problem. Previous research similarly identifies stigma and concerns about disclosure, labeling, and social consequences as barriers to professional mental health help-seeking among young people and adults (Clement et al., 2015; Gulliver et al., 2010; Schnyder et al., 2017).

The association between PDD_F2 and lower help-seeking intention was similar in direction and magnitude across the three symptom groups, and the cross-group comparison did not detect significant heterogeneity. This does not show that the true effects were identical, but it suggests that the association was not confined to a particular symptom state in the present sample. One possible explanation is that PDD_F2 reflects relatively general beliefs about the social consequences of a mental health label rather than evaluations activated only at higher levels of current symptoms.

PDD_F1, in contrast, showed only a small association in the low-symptom group, and its path did not differ significantly across groups. The more cautious interpretation is therefore not that one PDD component has a symptom-specific effect, but that different forms of perceived public stigma show different degrees of relevance to help-seeking, with PDD_F2 showing the more consistent pattern. Given the small effect sizes, PDD_F2 should be viewed as one correlate of help-seeking intention rather than a major determinant of whether students seek professional help.

4.2 Beyond a Simple Internalization Pathway: The Role of Self-Stigma

Perceived public stigma and mental illness self-stigma were not unrelated. Both PDD components were positively correlated with ISMI, which is consistent with theoretical models in which awareness and endorsement of social stereotypes may contribute to applying negative meanings to the self (Corrigan et al., 2009; Corrigan & Watson, 2002). Cross-sectional correlations, however, cannot establish the temporal order of this internalization process or show that self-stigma necessarily serves as the proximal pathway linking perceived public stigma to professional help-seeking.

The adjusted results place limits on such a simple internalization account. ISMI was not independently associated with help-seeking intention in any of the three symptom groups, nor did it consistently strengthen the negative associations between either PDD component and help-seeking intention. It is important here to distinguish mental illness self-stigma from help-seeking self-stigma. The ISMI assesses negative meanings attached to the self in relation to mental illness, rather than how individuals evaluate themselves specifically for seeking professional help (Tucker et al., 2013). The present findings therefore should not be taken to mean that all forms of self-stigma are unrelated to help-seeking. Instead, they suggest that mental illness self-

stigma should not be assumed to be a necessary pathway between perceived public stigma and professional help-seeking intention.

Supplementary analyses further showed that the association between ISMI and depressive symptoms varied across screening-defined symptom states. Its cross-sectional indirect association with lower help-seeking intention through depressive symptoms was also observed only in some groups and was small in magnitude. Previous research has linked internalized stigma with depressive symptoms, self-esteem, hope, and empowerment (Livingston & Boyd, 2010; Ritsher et al., 2003). Self-stigma may therefore remain relevant to psychological distress and negative self-evaluation even when its independent association with help-seeking intention is weak. What the present findings do not support is a universal pathway in which perceived public stigma reduces help-seeking primarily through mental illness self-stigma. In contrast, the association between PDD_F2 and help-seeking intention was more consistent across groups, suggesting that expectations of social devaluation and exclusion may enter help-seeking judgments as a potential social cost without necessarily depending on their full internalization into negative self-evaluations.

4.3 Social Context of Professional Help-Seeking Among Chinese University Students

The PDD_F2 findings may also be considered within the social and cultural context of Chinese university students. Cultural stigma theory emphasizes that the consequences of stigma depend on whether a label threatens identities, relationships, and social positions that are particularly valued in a given social environment—what Yang et al. (2007) described as “what matters most.” In Chinese contexts, a mental illness label may be linked to face concerns, family evaluation, social relationships, and role expectations. Its meaning may therefore involve not only personal shame or self-devaluation but also concerns about credibility, social acceptance, and future role opportunities (Yang & Kleinman, 2008). Research involving Chinese populations likewise suggests that cultural beliefs, social evaluation, and help-seeking norms may shape decisions about professional psychological help (S. X. Chen & Mak, 2008; Choi & Miller, 2014).

From this perspective, professional help-seeking may be viewed as an action that carries anticipated social consequences for some students. Their decisions may involve not only whether help is needed or whether counseling is effective, but also the possible social costs associated with being identified as having a mental health problem. Research in Chinese university settings has reported concerns about trust in campus counseling, confidentiality, and organizational barriers to help-seeking, providing some contextual support for this interpretation (Yan et al., 2026). However, the present study did not directly measure face concerns, family reputation, confidentiality beliefs, information disclosure, or experienced discrimination. These factors should therefore be regarded as theoretical and contextual explanations for the PDD_F2 association rather than established mediating mechanisms.

The findings are therefore more consistent with viewing perceived public stigma as a set of social beliefs with potentially different functions, rather than only as a distal background factor that becomes relevant after being internalized. For professional help-seeking, expectations of specific social devaluation, relational exclusion, and role consequences may be more closely related to perceived social risk than broad judgments about social acceptance. This interpretation is consistent with both the difference between PDD_F1 and PDD_F2 and the relatively stable pattern of PDD_F2 associations across screening-defined symptom states.

5. Practical Implications

Among the two empirical components of perceived public stigma, perceived social devaluation and exclusion consequences (PDD_F2) showed the most consistent negative association with professional help-seeking intention. This pattern suggests that efforts to promote help-seeking among university students may need to address not only mental health knowledge or general encouragement to seek help, but also concerns about the possible social consequences associated with a mental health problem.

One potentially relevant area is the transparency of confidentiality policies, information boundaries, and service procedures. Students should be clearly informed about how counseling records are stored and accessed, the limits of confidentiality, and when information may be shared during referral. Clear boundaries between psychological services and student administration or academic evaluation may also reduce concerns about unnecessary disclosure. These principles are consistent with Chinese legal and policy guidance on privacy protection and school-based mental health services (Ministry of Education et al., 2023; Standing Committee of the National People's Congress of the People's Republic of China, 2012). Anti-stigma interventions may also address specific concerns about competence, credibility, relationship acceptance, and future role opportunities. Where privacy and voluntary participation are ensured, social-contact approaches involving people with lived experience may help challenge negative stereotypes associated with mental health problems and professional help-seeking (Thornicroft et al., 2022).

These implications remain tentative. The present study assessed help-seeking intention rather than actual service use, and the cross-sectional associations do not show that reducing PDD_F2 would increase help-seeking behavior. Future intervention studies should test whether addressing confidentiality, disclosure concerns, and anticipated social consequences improves actual service engagement.

6. Limitations and Future Directions

Several limitations should be considered. First, the cross-sectional design does not establish the temporal or causal ordering of perceived public stigma, self-stigma, depressive symptoms, and professional help-seeking intention. Accordingly, the paths in the primary models represent concurrent associations, and the supplementary indirect effects should not be interpreted as causal mediation. The outcome was also help-seeking intention rather than actual service use. In addition, confidentiality concerns, identity disclosure, and anticipated role consequences discussed above were not directly measured. Longitudinal studies incorporating behavioral outcomes such as first appointments, attendance, and continued service use are needed to examine whether these anticipated social risks predict entry into professional care.

Second, the three groups were defined using GAD-7 and PHQ-9 screening thresholds rather than clinical diagnoses. The elevated anxiety-symptom group included participants with co-occurring elevated depressive symptoms, whereas the elevated depressive-symptom group excluded participants with GAD-7 scores ≥ 10 . The groups should therefore not be interpreted as symmetrical anxiety and depressive disorder categories, and the findings do not establish disorder-specific effects. Moreover, PHQ-9 scores were used both in group classification and as a continuous predictor, producing restricted within-group variation, particularly in the elevated depressive-symptom group. Future studies could examine continuous symptom dimensions, a broader range of anxiety–depression profiles, and clinically assessed samples.

Third, the two-component structure of the PDD remains empirical and provisional. Although the one-factor model fitted poorly and both exploratory and confirmatory analyses separated the same two sets of items, the two components were closely aligned with positive versus negative wording direction. The present data therefore cannot clearly distinguish substantive differences in stigma content from wording-related method effects. Replication using items that cross content with wording direction, or multitrait–multimethod designs, would provide a stronger test of the construct and predictive validity of PDD_F1 and PDD_F2.

Finally, although participants were recruited from 12 universities of different types and school fixed-effects and cluster-robust sensitivity analyses were conducted, the number of universities was limited and cluster sizes were uneven. This reduced the precision of some cluster-adjusted estimates, particularly in the smaller elevated depressive-symptom group. The apparent consistency of the PDD_F2 association across symptom states should therefore be understood as relative stability in direction and magnitude rather than identical statistical significance under all clustering corrections. The sample was also not nationally representative, and online recruitment and the distribution of participating universities may limit generalizability. Replication in larger multisite student samples, clinical populations, and other cultural settings is needed.

7. Conclusion

Across screening-defined symptom states among Chinese university students, perceived social devaluation and exclusion consequences (PDD_F2) showed the most consistent association with lower professional psychological help-seeking intention. The association was similar in direction and magnitude across the elevated anxiety-symptom, elevated depressive-symptom without elevated anxiety, and low-symptom groups, whereas PDD_F1 showed weaker associations and mental illness self-stigma showed no consistent independent association.

These findings suggest that anticipated social devaluation, relational exclusion, and role consequences associated with a mental health label may be relevant to professional help-seeking decisions. Given the cross-sectional design and the assessment of intention rather than actual service use, these associations require confirmation in longitudinal and behavioral studies.

Declarations

Ethics approval and consent to participate

The study was approved by the Universiti Utara Malaysia Research Ethics Committee through the Awang Had Salleh Graduate School of Arts and Sciences, Universiti Utara Malaysia (Ref. No. UUM/CAS/AHSGS/E-5; 30 September 2025). All procedures were conducted in accordance with relevant ethical guidelines and regulations. All participants were aged 18 years or older and provided electronic informed consent before participating in the study.

Consent for publication

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Author Contribution

YT performed the formal analysis and drafted the original manuscript. AZ and FNMF contributed to the methodology and supervision of the study and critically reviewed and revised the manuscript. LX contributed resources, coordinated the research, and undertook project administration. WX, ZD, LH, and ZY contributed to the investigation and data collection. LT contributed financial and logistical support for the conduct of the study. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available because they contain potentially sensitive mental health information and because unrestricted public sharing was not covered by the ethics approval and agreements with the participating institutions. De-identified data may be available from the corresponding author upon reasonable request, subject to approval by the relevant ethics committee and institutions.

Competing interests

The authors declare that they have no competing interests.

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Figures

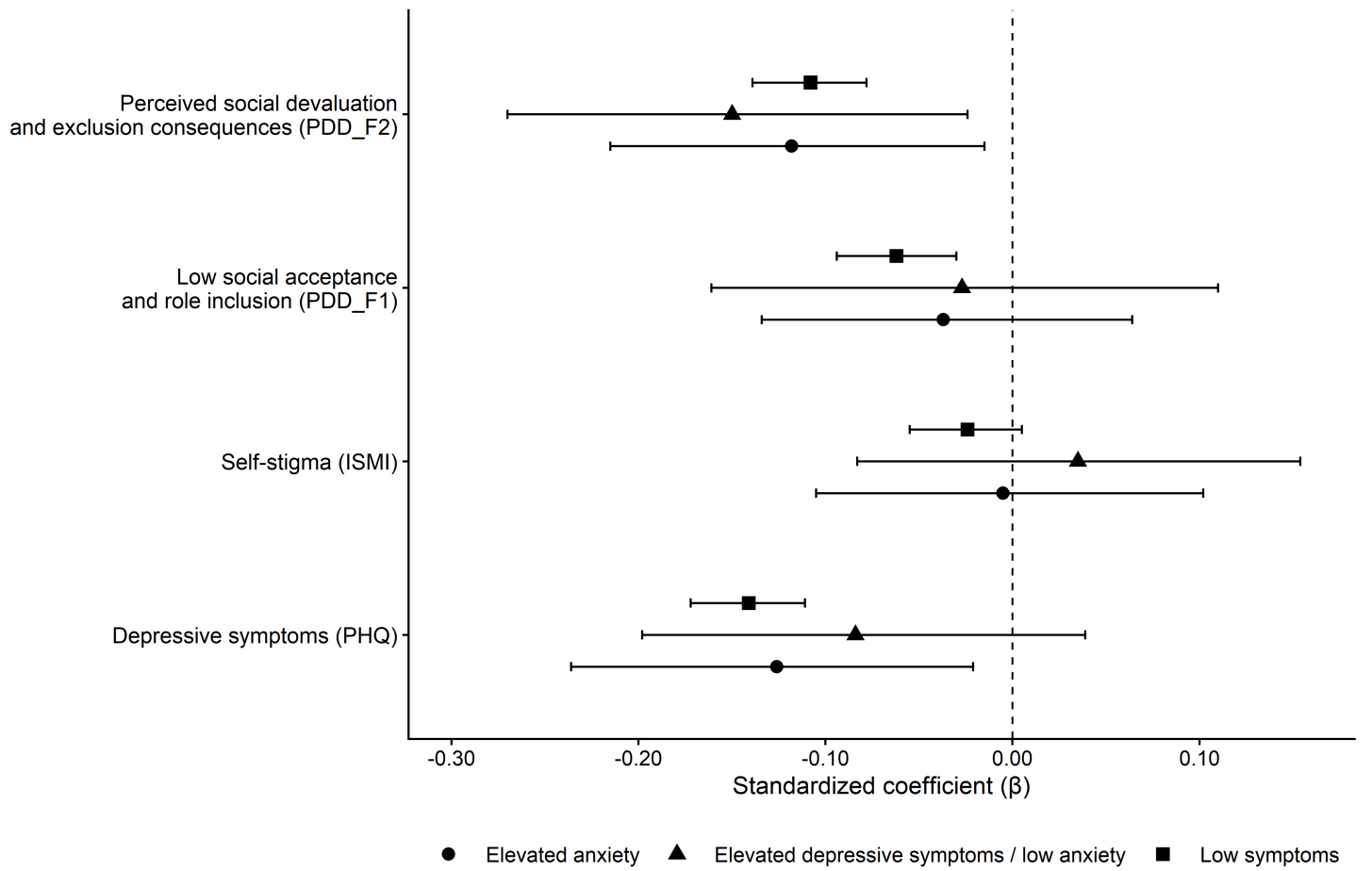


Figure 1

Standardized Associations With Professional Psychological Help-Seeking Intention Across Screening-Defined Symptom Groups