

SELF-CONCEALMENT, DEPRESSIVE SYMPTOMS, AND SEEKING PROFESSIONAL HELP: EVIDENCE OF AN INVARIANCE MODEL

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Abstract

This study examines the relationship structure between self-concealment, depressive symptoms, and professional help-seeking, and evaluates its invariance by gender in a sample of 500 Chilean university students. Multi-group structural equation models were used to examine invariance and the relationship structure between variables. The hypothesized model showed a good fit to the data, $\chi^2(132)= 189.793$, $p < .050$, CFI= .993, TLI= .991, RMSEA= .030 [.020, .039], SRMR= .052, and achieved strict (residual) invariance. For both groups, self-concealment is directly and significantly related to depressive symptoms. In female there is a significant inverse relationship between self-concealment and professional help-seeking, while in male self-concealment has an indirect relationship with professional help-seeking, mediated by depressive symptoms. These results underscore the hindering role of self-concealment and the importance of considering gender differences in understanding professional help-seeking for mental health.

KEY WORDS: *self-concealment, depressive symptoms, mental health help-seeking.*

Resumen

El presente estudio analiza la estructura de relaciones entre el autoocultamiento, los síntomas depresivos y la búsqueda de ayuda profesional, y evalúa su invarianza según el género en 500 estudiantes universitarios chilenos, mediante modelos de ecuaciones estructurales multigrupo. El modelo hipotetizado presentó un adecuado ajuste a los datos, $\chi^2(132)= 189,793$; $p < 0,050$; CFI= 0,993; TLI= 0,991; RMSEA= 0,030 [0,020, 0,039]; SRMR= 0,052, y alcanzó un nivel de invarianza estricto. Se evidenció que para ambos grupos el autoocultamiento se relaciona de manera directa con los síntomas depresivos, en mujeres se evidencia una relación inversa entre el autoocultamiento y la búsqueda de ayuda profesional, y en hombres el autoocultamiento tiene una relación indirecta con la búsqueda de ayuda profesional, mediada por los síntomas depresivos. Estos resultados relevan el rol obstaculizador del autoocultamiento y

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la importancia de considerar las diferencias de sexo en la comprensión de la búsqueda de ayuda profesional en salud mental.

PALABRAS CLAVE: *autoocultamiento, síntomas depresivos, búsqueda de ayuda en salud mental.*

Introduction

Mental disorders are a public health priority (COVID-19 Mental Disorders Collaborators, 2021), with a sustained increase in the last few decades (Bor et al., 2014; Lipson et al., 2022), accentuated after the pandemic context by COVID-19 (Zolopa et al., 2022) in depressive, anxiety, and stress disorders (Kauhanen et al., 2023). In particular, the Global Burden of Diseases (GBD 2019 Mental Disorders Collaborators, 2022) identifies depression as one of the most prevalent and disabling disorders today. It usually manifests with a wide range of symptoms, such as exhaustion, lack of concentration, anxiety, disinterest in daily activities, depressed mood, changes in appetite and sleep, difficulty in reasoning, and feelings of worthlessness and guilt (Backhaus et al., 2022; Bresolin et al., 2020). Although effective treatments are available (Bueno & Simon, 2024; Garcia & Maldonado, 2022), given their characteristics, it is difficult for sufferers to seek professional help in time, which can lead to persistent and worsening symptoms and significantly affect various spheres of life (Kelly and Yip, 2006).

Much of the research on seeking professional help in mental health has focused on the university population (Lipson et al., 2022; Pedrelli et al., 2015) due to their worrying mental health indicators (Auerbach et al., 2018; Martínez et al., 2021). These indicators are linked to the characteristics of emerging adulthood, marked by a high burden of academic demands and family, economic, and social pressures, which would trigger a higher likelihood of experiencing mental health symptomatology (Arrieta & Díaz, 2014; Barrera-Herrera et al., 2019; Domínguez-Alarcón et al., 2023; Martínez et al., 2021). A recent meta-analysis (Solmi et al., 2022) establishes that the onset of depressive symptoms occurs at this stage, a fact demonstrated by 25,9% of 18-year-olds and 47% of 25-year-olds.

In Chile, according to data from the Tenth National Youth Survey (Instituto Nacional de las Juventudes, 2022), one in four young people present moderate or severe symptoms of psychological distress (26,9%), a percentage statistically higher than the adult population (13,0%). Similarly, a recent study with Chilean university students (Salinas-Oñate et al., 2023) shows that most of the university population does not seek professional help and prefers to rely on close friends and family (Bruffaerts et al., 2019; Kamunyu et al., 2016; Koydemir et al., 2010). In addition, women report greater depression symptomatology (Gao et al., 2020; Lin et al., 2021; Shorey et al., 2022; Urdiales-Claros & Sánchez-Álvarez, 2021; Vázquez-Salas et al., 2023) and more favorable attitudes towards seeking professional help (Chang, 2007; Perenc & Radochonski, 2016).

Understanding the factors associated with seeking professional help for mental health issues like depression is crucial. One of the factors identified

is self-concealment, defined as the tendency to withhold personal information considered distressing or embarrassing (Larson et al., 2015), which operate primarily through maladaptive emotion regulation (Appleton et al., 2013; Cruddas et al., 2012; Reyome et al., 2010) and keeping secrets (Davis & Brazeau, 2021; Kelly & Yip, 2006).

Self-concealment not only reduces the likelihood of seeking help but may also exacerbate some mental health problems, such as depression (Cruddas et al., 2012; Frijns et al., 2005; Mendoza et al., 2018), and even increase the risk of suicidal ideation (Hogge & Blankenship, 2020). Recent studies suggest that the relationship between self-concealment and mental health issues may vary significantly by gender, finding stronger associations in women than men (Chinweuba et al., 2023). These results highlight the need to consider gender variability when assessing the effects of self-concealment.

Importantly, self-concealment is associated with lower levels of seeking professional help, in part because the process of seeking help might be perceived as a negative, undesirable, and abnormal experience (Doblyte & Jiménez-Mejías, 2017; Larson et al., 2015). Previous studies have identified the need to examine whether this possible explanation varies by gender. While some authors (Wallace & Constantine, 2005) point out that self-concealment predicts less favorable attitudes towards seeking help only in men, others show gender invariance in predictive models, where the role of self-concealment in seeking professional help is considered (Vogel & Armstrong, 2010).

Conversely, some studies suggest that self-concealment may increase the likelihood of help-seeking when its association includes depressive symptoms. Specifically, the greater the self-concealment, the greater the intensity of depressive symptoms, which could eventually lead to a greater intention to seek professional help (Cramer, 1999; Morgan et al., 2003; Tuliao et al., 2016; Vogel & Armstrong, 2010). In this context, depressive symptoms could be a mediator of the relationship between self-concealment and seeking professional help. This mechanism suggests that, although self-concealment acts as a barrier to help-seeking (Doblyte & Jiménez-Mejías, 2017; Larson et al., 2015), increasing the severity of depressive symptoms may lead to overcoming this barrier, increasing the likelihood of seeking professional help.

The present study examined the structure of relationships between self-concealment, depressive symptoms, and seeking professional help among Chilean university students. It employed a model in which self-concealment can act both as a direct barrier to seeking help and, paradoxically, as a catalyst for seeking professional help through the mediation of depressive symptoms. In addition, the study analyzed how gender differences affect these dynamics by assessing an invariance model. Consequently, the following hypotheses were tested: (H1) Self-

concealment will have an inverse effect on seeking professional help; (H2) Self-concealment will have a direct effect on depressive symptoms; (H3) Self-concealment will have an indirect effect on seeking professional help, mediated by depressive symptoms (see Appendix).

Exploring this model is relevant in the Chilean context, given the high prevalence of depression in this population (Auerbach et al., 2018) and low rates of help-seeking (Cova Solar et al., 2007; Hojman et al., 2018). This study is groundbreaking in examining whether self-concealment is an obstacle or a catalyst for seeking help, which is crucial for developing effective intervention strategies in university contexts sensitive to gender differences.

Method

Participants

Five hundred university students (249 males and 251 females) between 18 and 29 years of age were recruited from a university in La Araucanía Region, Chile, using a three-month non-probability convenience sample method from December 2020 to March 2021. According to Soper (2024), the suggested sample size for testing hypothesized relationships among variables, considering a small effect size and a statistical power of 0.8, is at least 200 participants. Since two groups were compared, 500 participants were sampled to ensure the robustness of the analyses. Those who participated were, on average, 20.4 years old ($SD= 1.8$) and belonged to different faculties, with a higher representation from the faculty of engineering and sciences (32.2%). Most (77%) came from urban areas and belonged to the middle socioeconomic status (SES) (77%). Female and male students were compared for several demographic variables of interest, and gender differences were found based on origin (with small effect sizes) and in two faculties that represent a small percentage of the sample (with small and moderate effect sizes). Consequently, the female and male student groups are considered feasible for comparison (Table 1).

Instruments

- a) *Self-Concealment Scale* (SCS; Larson & Chastain, 1990), Spanish-adapted version by Salinas-Oñate et al. (2022). The SCS consists of eight items with a five-point Likert scale response format (1= Strongly disagree to 5= Strongly agree) (e.g., "When something bad happens to me I tend to keep it to myself"). Higher scores reflect higher levels of self-concealment. This scale has evidence of construct validity in Chilean university students, exhibiting a unidimensional structure (Salinas-Oñate et al., 2022). In the present study, the scale had an adequate internal consistency index ($\omega= .89$).

Table 1
Sociodemographic characteristics of the sample

Sociodemographic characteristics	Total sample	Gender		Comparison tests
		Female (n= 251)	Male (n= 249)	
Age, <i>M (SD)</i>	20.41 (1.81)	20.49 (1.97)	20.32 (1.63)	$t(498) = -1.03$
Faculty (%)				
Agricultural and Forestry Sciences	6.20	6.43	5.98	$\chi^2(1) = 0.04$
Education, Social Sciences, and Humanities	18.80	9.24	28.29	$\chi^2(1) = 29.65, d = 0.50$
Engineering and Sciences	32.20	43.37	21.12	$\chi^2(1) = 1.10$
Medicine	10.60	12.05	9.16	$\chi^2(1) = 0.03$
Dentistry	12.00	8.03	15.94	$\chi^2(1) = 7.39^*, d = 0.25$
Legal and Business Sciences	20.20	20.88	19.52	$\chi^2(1) = 0.14$
Origin (%)				
Rural	23.00	28.11	17.93	$\chi^2(1) = 7.30^*, d = 0.24$
Urban	77.00	72.69	81.27	$\chi^2(1) = 5.19^*, d = 0.20$
Socioeconomic status (%)				
Low	9.00	10.04	7.97	$\chi^2(1) = 0.65$
Lower middle	26.00	26.91	24.30	$\chi^2(1) = 0.45$
Middle	27.00	27.31	26.29	$\chi^2(1) = 0.07$
Upper middle	24.00	22.09	25.90	$\chi^2(1) = 0.99$
High	9.00	9.24	9.56	$\chi^2(1) = 0.02$
Very High	5.00	5.22	5.58	$\chi^2(1) = 0.03$

Note: * $p < .05$.

- b) *Depression, Anxiety, and Stress Scales-21 Items* (DASS-21; Lovibond & Lovibond, 1995). The depression symptoms subscale of the adapted version of the DASS-21 was used for Chilean university students (Antúnez & Vinet, 2012). This subscale consists of seven items with a four-point Likert-type response format (0= Does not describe anything that happened to me or I felt in the week to 3= Yes, this happened to me a lot, or almost always) (e.g., "I was unable to get excited about anything"). Higher scores reflect a greater presence of depression symptoms during the last few weeks. The DASS-21 has evidence of construct validity in Chilean university students, exhibiting a three-dimensional structure (symptoms of depression, anxiety, and stress) (Antúnez & Vinet, 2012). The reliability of the depression symptoms subscale obtained in this study was excellent ($\omega = .90$).
- c) *General Help-Seeking Questionnaire* (GHSQ-V; Wilson et al., 2011), Spanish adaptation version by Olivari and Guzmán-González (2017). The GHSQ-V assesses the intention to seek help from different sources (e.g., psychologist) for six types of mental health problems (stress, anxiety, depression, suicidal ideation, substance abuse, and psychosis) presented through vignettes. For

this study, only the depression vignette and the items "psychologist", "psychiatrist", and "doctor" were used. The respondent indicates the likelihood of seeking help from each of these professional sources in the event of experiencing a problem similar to that of the protagonist of the vignette, using a 5-point Likert-type scale (1= "Very unlikely" to 5= "Very likely"). Higher scores reflect higher intention to seek professional help. This questionnaire has evidence of construct validity in Chilean university students, exhibiting a two-dimensional structure (formal and informal sources of help) (Silva et al., 2022). For this study, the reliability of professional help-seeking for depression composed of these three items was calculated and found to be adequate ($\omega = .78$).

- d) *Ad hoc questionnaire for socio-demographic and mental health history data.* This questionnaire was used to collect information about age, gender, origin (urban/rural), Mapuche ethnicity, faculty, and socioeconomic level (SES) of participants. The SES was calculated using the ESOMAR scale, which estimates social status by cross-referencing the education level and occupation of the household's primary income earner, following the procedure described by Adimark (2000).

Procedure

Participants were selected from a database provided by the university where the study was conducted. They were contacted via e-mail, inviting them to participate and clarifying the study objectives. Those who accepted signed a digital informed consent form, which provided details of the study and explained the confidential and voluntary nature of their participation. As the study involved the application of a scale that measures mental health symptomatology (DASS-21), participants were asked to indicate their consent to be informed via email if they received a risk score. They then answered the instruments on the QuestionPro online platform. Since this study is part of a research project where other variables were measured, the average response time was 35 minutes. Participation was compensated with 2,000 Chilean pesos.

The study protocol was endorsed and approved by the Scientific Ethics Committee of the sponsoring university (file 037_2020) and fulfills the ethical principles decreed by the Declaration of Helsinki (World Medical Association, 2013).

Data analysis

Descriptive analyses, t-tests for mean differences, and chi-square tests were used to characterize the sample, and these were accompanied by their effect size measures (Cohen's d). Then, descriptive analyses and correlations between the items of the model were conducted. Next, a mediation model was calculated in the R software with the lavaan package (Rosseel, 2012) to examine the

relationship between self-concealment and seeking professional help, with depressive symptoms as the mediator. Due to the ordinal nature of the items, the diagonally weighted least squares (DWLS) estimation method was used (Flora & Curran, 2004). The model was evaluated according to conventional fit indicators: χ^2 with its degrees of freedom, the comparative fit index (CFI), the Tucker-Lewis index, the root means square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). The model was evaluated according to the conventional fit indicators proposed by Hu and Bentler (1999): CFI and TLI > .90, and RMSEA and SRMR \leq .08.

In the next step, the model was tested for gender invariance. Accordingly, the model was tested for male and female students. Then, following the recommendations of Milfont & Fischer (2010), multigroup confirmatory analyses were carried out to assess the gender invariance of the model. During this analysis, equality constraints were progressively applied between the groups being compared, ensuring that the comparison made sense (Salazar-Fernandez et al., 2023 for an illustration of invariance analysis and its steps in lavaan). Thus, restrictions were applied to both groups in terms of shape or configuration, factor loadings, intercepts, and residuals of each model. This required testing four different invariance models: configural, metric, scalar, and residual. If these equality constraints decreased the model's goodness of fit, it was concluded that the expected level of invariance had not been achieved. According to Sass and Schmitt (2013), it is necessary to attain scalar invariance to ensure that the model configuration is similar (shape constraint), that the latent factors have the same interpretation (factor loadings constraint), and that the differences in means in the latent construct capture all differences in the shared variance of the items. This level of invariance is essential for meaningful comparisons between groups. To evaluate whether the model's fit quality diminished, we applied Chen's conventional criterion (2007). Chen argues that model invariance is rejected if the $\Delta CFI < -.010$. If scalar or residual invariance is achieved, comparing the parameters between models is possible.

Results

Regarding the correlations between the variables of the model, according to gender, positive associations of moderate to high magnitude were observed between self-concealment and depressive symptoms, as well as negative correlations of low magnitude between depressive symptoms and help-seeking. On the other hand, the correlations between self-concealment and seeking professional help were insignificant (Table 2). When the means by instrument were calculated and compared by gender, statistically significant differences were observed in self-concealment, $t(498) = -4.00$, $p < .05$, $d = 0.36$, and depressive symptomatology, $t(498) = -2.98$, $p < .05$, $d = 0.27$. Specifically, female students showed significantly higher scores in self-concealment (female = 3.57, $SD = 0.84$ vs. male = 3.22, $SD = 0.85$) and depressive symptoms (female = 8.33, $SD = 5.22$ vs.

Table 2
Correlations and descriptive statistics for males (n= 249) and females (n= 251)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Depr-1	-	.52*	.55*	.60*	.53*	.57*	.55*	.33*	.31*	.38*	.28*	.27*	.25*	.34*	.26*	-.11	-.18*	-.01
2. Depr-2	.53*	-	.45*	.55*	.58*	.46*	.43*	.26*	.24*	.25*	.17*	.17*	.21*	.24*	.25*	-.06	-.15*	-.04
3. Depr-3	.61*	.43*	-	.57*	.48*	.63*	.85*	.26*	.27*	.34*	.23*	.15*	.22*	.29*	.24*	-.06	-.12	-.06
4. Depr-4	.66*	.44*	.62*	-	.55*	.63*	.58*	.38*	.36*	.38*	.29*	.21*	.19*	.25*	.26*	-.21*	-.17*	-.10
5. Depr-5	.50*	.56*	.39*	.41*	-	.50*	.48*	.29*	.31*	.34*	.33*	.28*	.20*	.31*	.25*	-.06	-.12	-.03
6. Depr-6	.59*	.43*	.66*	.57*	.49*	-	.66*	.35*	.33*	.48*	.37*	.30*	.29*	.40*	.39*	-.12	-.10	-.06
7. Depr-7	.57*	.44*	.82*	.62*	.43*	.63*	-	.32*	.28*	.35*	.23*	.19*	.19*	.28*	.25*	-.09	-.13*	-.04
8. SC-1	.27*	.24*	.33*	.39*	.24*	.28*	.30*	-	.34*	.49*	.37*	.38*	.51*	.43*	.33*	-.11	-.08	-.06
9. SC-2	.23*	.07	.27*	.29*	.12	.30*	.20*	.29*	-	.33*	.25*	.21*	.24*	.37*	.28*	-.17*	-.18*	-.08
10. SC-3	.36*	.32*	.38*	.45*	.25*	.42*	.35*	.55*	.35*	-	.59*	.50*	.38*	.42*	.40*	-.16*	-.12	-.07
11. SC-4	.28*	.22*	.27*	.33*	.24*	.29*	.20*	.40*	.28*	.59*	-	.60*	.34*	.37*	.35*	-.14*	-.10	-.01
12. SC-5	.33*	.31*	.30*	.39*	.27*	.40*	.27*	.38*	.24*	.49*	.50*	-	.38*	.36*	.32*	-.15*	-.13*	-.08
13. SC-6	.32*	.25*	.30*	.31*	.25*	.39*	.28*	.57*	.29*	.44*	.40*	.53*	-	.64*	.27*	-.18*	-.04	-.04
14. SC-7	.29*	.19*	.26*	.30*	.32*	.33*	.22*	.41*	.45*	.38*	.30*	.38*	.58*	-	.36*	-.14*	-.07	-.00
15. SC-8	.35*	.21*	.37*	.33*	.26*	.36*	.33*	.37*	.23*	.43*	.43*	.34*	.35*	.34*	-	-.11	-.09	-.07
16. HS-1	-.16*	-.16*	-.17*	-.16*	-.24*	-.17*	-.17*	-.10	-.08	-.10	-.13*	-.07	-.10	-.05	-.11	-	.50*	.59*
17. HS-2	-.16*	-.18*	-.13*	-.11*	-.14*	-.15*	-.15*	-.06	-.01	-.12	-.09	-.07	-.08	.00	-.20*	.50*	-	.53*
18. HS-3	-.11*	-.14*	-.05	-.01	-.19*	-.07	-.07	-.06	-.00	-.07	-.06	-.00	-.05	-.04	-.18*	.59*	.56*	-
M	1.05	1.70	.55	1.12	1.06	.83	.65	3.28	2.40	3.80	3.59	3.56	3.17	2.80	3.15	3.18	2.36	2.42
	1.20	1.97	.73	1.46	1.10	1.09	.79	3.45	2.49	4.07	3.78	4.10	3.55	3.17	3.52	3.22	2.28	2.26
SD	.90	.90	.89	.92	.89	.994	.95	1.23	1.14	1.17	1.22	1.19	1.31	1.25	1.23	1.44	1.43	1.44
	.91	.89	.95	.88	.92	1.043	1.01	1.24	1.16	.99	1.15	1.07	1.27	1.25	1.24	1.51	1.42	1.48

Notes: Depr= Depressive symptoms; SC= Self-concealment; HS= help-seeking. The data below the diagonal correspond to the male gender, while those above the diagonal correspond to the female gender. Means and standard deviations in the top row correspond to males, and those in the bottom row correspond to females. *p< .05.

male= 6.96, $SD= 5.01$) than their male peers. Regarding seeking professional help, there was no significant difference between the groups $t(498)= 0.64$, $p= .52$ (female= 2.58, $SD= 1.22$ vs. male= 2.65, $SD= 1.19$).

Model

The results obtained with the total sample for the mediation model between self-concealment and seeking professional help through depressive symptoms presented an adequate fit to the data, $\chi^2(132)= 189.79$, $p< .05$, CFI= .99, TLI= .99, RMSEA= .03 [.02, .03], SRMR= .05. In this model, the relationship between self-concealment and seeking professional help was statistically significant ($\beta= .13$, $p< .05$), as was the relationship between depressive symptoms and seeking professional help ($\beta= -.10$, $p< .05$) and between self-concealment and depressive symptoms ($\beta= .61$, $p< .05$).

Invariance model

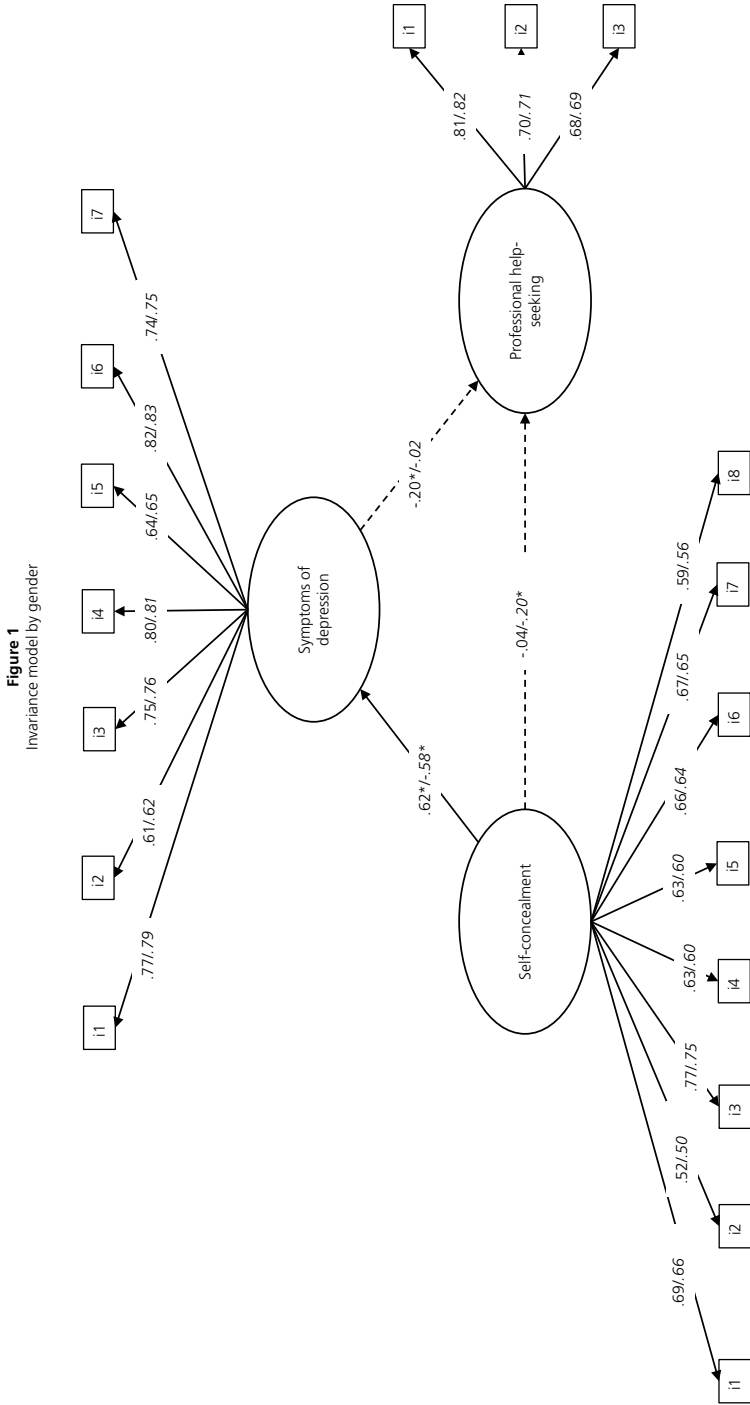
The invariance of the proposed mediation model was tested in both the female sample ($n= 251$) and the male sample ($n= 249$) to evaluate the invariance of the proposed mediation model. This model presented an adequate fit for both samples. Then, when estimating the configural, metric, scalar, and residual invariance models, the models did not show an overall deterioration of their fit (Table 3). Specifically, the deterioration of the CFI was not greater than that proposed by Chen (2007), suggesting that the model is invariant up to the strictest level (residual) according to gender.

Table 3
Model fit indicators for the mediation model in the total sample, in the female and male gender groups, and invariance tests

Model	χ^2	gl	p	CFI	TLI	RMSEA (IC 90%)	SRMR	Contraste de modelos	Δ CFI
Total sample	189.793	132	< .001	.993	.991	.052 (.02, .039)	.052	-	
Female	112.692	132	.887	1.000	1.000	.000 (.00, .015)	.056	-	
Male	148.326	132	.157	.996	.995	.022 (.00, .039)	.063	-	
Configural invariance	261.018	264	.540	1.000	1.000	.000 (.00, .024)	.057	-	
Metric invariance	300.575	279	.179	.997	.997	.018 (.00, .031)	.060	Métrica vs. configural	.003
Scalar invariance	323.260	294	.116	.996	.996	.020 (.00, .032)	.062	Escalar vs. métrica	-.001
Residual invariance	335.227	312	.175	.997	.997	.017 (.00, .030)	.064	Residual vs. escalar	.001

Note: CFI= Comparative fit index; TLI= Tucker-Lewis index; RMSEA= Root mean square error of approximation; SRMR= Standardized root mean square residual.

Establishing the strictest level of invariance allows valid comparisons between male and female students. Under this premise, the interactions between the model variables were analyzed (Figure 1). It was observed that the relationship between self-concealment and seeking professional help was not statistically significant in the male participants ($\beta= -.04$, $p= .43$); however, in female participants, a small but significant inverse correlation was detected ($\beta= -.20$, $p< .05$). On the other hand, the association between self-concealment and depressive symptoms was statistically significant and strongly positive for both male ($\beta= .62$, $p< .05$) and female students ($\beta= .58$, $p< .05$). However, gender differences were found in the



$\chi^2(321) = 335.227, p = 0.175, CFI = 0.997, RMSEA = 0.017 [0.000, 0.030], SRMR = 0.064.$

Note: Incomplete lines represent non-significant paths for at least one gender. Standardized coefficients for females are in italics.

relationship between depressive symptoms and professional help-seeking: in male participants, this relationship was significant, negative, and small in magnitude ($\beta = -.20, p < .05$), while for the female, it was not significant ($\beta = -.02, p = .67$).

These results suggest that the relationships between the variables in the model differ according to gender. In the case of female students, the relationship between self-concealment and seeking professional help is inverse and significant, whereas the mediating impact of depressive symptoms is not significant in this relationship. This suggests that, among female students, self-concealment is associated with a diminished willingness to seek professional help, irrespective of the presence of depressive symptoms. The situation is different for male students. Here, although self-concealment has no significant direct effect on help-seeking, it does show significant associations with depressive symptoms and these symptoms with help-seeking. This pattern suggests complete mediation. That is, in male students, self-concealment appears to influence psychological help-seeking primarily through its effect on depressive symptoms (Figure 1).

Discussion

This study aimed to analyze the connections between self-concealment, depressive symptoms, and seeking professional help for depression among Chilean university students. It employed a model that considers self-concealment both a direct obstacle to seeking help and, paradoxically, a factor that can promote help-seeking through the influence of depressive symptoms. In addition, gender invariance was evaluated.

The first relevant finding was that the model tested showed evidence of strict invariance, indicating that it fits both groups and that the constructs mean the same for those identifying with the male and female gender. However, the pattern of multivariate relationships is different for each group. This implies that specific dynamics underlie how self-concealment affects seeking professional help for depression, as mediated by depressive symptoms, for female and male students. These results will be discussed below, considering first the common findings between female and male students and then the distinctive ones for each group.

One result observed for both female and male students was the direct effect of self-concealment on the experience of depressive symptomatology (H2). Thus, those in the sample who revealed a greater tendency to conceal information considered stressful or distressing were more likely to experience depressive symptoms. This result is consistent with findings from university populations in other countries, adding to the evidence that concealing painful and traumatic information functions as a maladaptive regulation mechanism, potentially increasing levels of physical and psychological distress (Masuda et al., 2011), particularly depressive symptoms (Larson & Chastain, 1990; Larson et al., 2015). This association presents a concerning scenario for a population already recognized as vulnerable to mental health issues (Barrera-Herrera & San Martín,

2021). Additionally, the distinctive characteristics associated with higher levels of self-concealment, which include precisely the concealment of stressful information, could lead to neglecting the needs of this specific group. This underscores the importance of identifying these students effectively, considering that current evidence places the perception of loneliness as a risk factor that aggravates people's mental health (Pedrero-Pérez et al., 2023).

Concerning the findings that showed differences between female and male students, an effect of self-concealment on seeking professional help (H1) was only observed in the female. This suggests that, for the female university students in the sample, self-concealment is simultaneously related to both greater experience of depressive symptoms and less willingness to seek professional help. This carries an additional risk, as these students are less likely to access specialized support to address the problems they are actively hiding. This situation poses a significant challenge in identifying and accompanying this group.

Finally, an indirect effect of self-concealment on seeking professional help, mediated by depressive symptoms, was observed only among male students (H3). Therefore, a higher level of self-concealment was linked to a stronger manifestation of depressive symptoms, which subsequently resulted in a lessened inclination to seek professional help. This means that in those who present greater tendencies to self-concealment, the search for professional help is hindered to the extent that they show an increase in depressive symptoms. This is a discouraging scenario since it would be precisely the students with the most depressive symptoms who would need greater professional support, as they would already be developing the first signs of what could constitute a depressive disorder. Therefore, it is crucial to remember that the phenomenon of self-concealment among male students also constitutes a warning sign that demands attention. Particularly noteworthy is that this particular group, when faced with depression symptoms, has a heightened aversion to seeking assistance from mental health professionals.

It should be noted that this finding could also be influenced by how seeking professional help was measured (by intention rather than actual behavior). It is possible to hypothesize that for male students, this could increase social desirability in their responses, given that the traditional gender norm that values being independent, self-sufficient, strong, and resilient (Gulliver et al., 2010) would be counterbalanced by acknowledging the intention to seek help for depression. This is consistent with findings showing less willingness to express feelings of distress in men (Vogel et al., 2003).

It is important to note that the above finding is contrary to what is established in the literature, which argues that greater self-concealment is related to greater depressive symptoms, and these, in turn, to a greater willingness to seek professional help (Cramer, 1999; Larson et al., 2015; Tulião et al., 2016; Tran-Chi et al., 2021). In this regard, future studies need to consider the inclusion of other variables that could help to understand the complexity of the relationship between depressive symptoms and seeking professional help.

First, it is suggested that the role of the stigma associated with depression be explored (Dinos et al., 2004; McNair et al., 2002) since it has been identified as an obstacle to seeking professional help in individuals with depressive symptoms (Barney et al., 2006). The inclusion of this variable is relevant, especially in Chilean samples, given that there is only evidence of the role of stigmatizing beliefs towards mental health patients in general, revealing a greater adherence to these beliefs among male university students (Salinas-Oñate et al., 2018; Salinas-Oñate et al., 2023). However, the stigma associated with depression has scarcely been addressed. Furthermore, it is advisable to take into account a more comprehensive assessment of the distinct attributes of depressed symptoms, as anhedonia (the inability to experience pleasure) has been associated with a reduced intention to seek professional help (Akouri-Shan et al., 2022). Third, it is also suggested that the duration of the depressive symptoms (and not their intensity) be considered, as this is associated with a greater willingness to seek professional help (Boerema et al., 2016). Fourth, the role of causal attributions regarding depression should be considered in the decision to seek help since those linked to biological causes are associated with a greater likelihood of seeking professional help (Deacon & Baird, 2009) and with a lower stigma of depression (Barney et al., 2006; Dinos et al., 2004).

This study broadens the research on self-concealment, depressive symptoms, and seeking professional help; however, it is crucial to interpret its findings with both its limitations and strengths in mind. In terms of limitations, its cross-sectional design suggests the need to validate the proposed relationships through longitudinal designs. In addition, the use of self-report instruments implies biases that could be overcome by using behavioral measures of seeking professional help, as well as instruments that allow the intensity and duration of depressive symptoms to be classified or even include diagnoses of depression. Finally, the findings address the problem in Chilean female and male university emerging adults. It is suggested that research on this topic be extended to non-university emerging adults from other cultural contexts and other gender identities (e.g., non-binary people).

Regarding the advantages of this study, it represents a first approach to the study of the role of self-concealment in seeking help for depression among university students in the local context. This contributes to clarifying the structure of the relationships between these variables by incorporating a gender invariance analysis, an essential approach in the study of mental health issues due to the notable gender gaps evidenced (Cabezas-Rodríguez et al., 2021). The results make it possible to project studies in the area that incorporate the examination of relevant variables, such as attributions about the causes of depression and the stigma associated with it.

These results highlight the importance of considering gender differences in psychological research and clinical practice. In this regard, it is crucial to implement strategies that encourage the disclosure of information in safe environments, along with destigmatization campaigns that normalize seeking help for mental

health issues and promote mental health literacy. These promotion and prevention activities must be designed to overcome the obstacle of requiring participants to disclose themselves as at-risk or interested in mental health issues (Constantine et al., 1997; Kelly & Achter, 1995; Wallace & Constantine, 2005). Therefore, for an effective approach, both research and practice must consider the phenomenon of self-concealment.

Finally, considering the relationships identified among the study variables and the correlates that mental health issues have shown with academic variables (e.g., lower academic performance), there is an urgent need for higher education institutions to identify at-risk populations early, to ensure timely intervention that fosters confidentiality and promotes healthy coping strategies, thereby contributing to a healthier university environment.

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Appendix

Hypothesized model of relationships between self-concealment, depressive symptoms, and help-seeking behavior

