Alexithymia and Difficulties in Emotion Regulation Among University Students

Noreena Kausar [1*] Misbah Arshad [2] Eman Nasir [3]

[1] Assistant Professor, Department of Psychology, University of Gujrat, Gujrat, Punjab Pakistan.
Email: noreena.kausar@uog.edu.pk

[2] Assistant Professor, Department of Psychology, University of Gujrat, Gujrat, Punjab Pakistan.
Email: misbah.arshad@uog.edu.pk

[3] M.Phil. Scholar, Department of Psychology, University of Gujrat, Gujrat, Punjab Pakistan.
Email: emannasir576@gmail.com

ABSTRACT: This cross-sectional correlational study observed the relationship between alexithymia and difficulties in emotion regulation among undergraduate students. There were 400 students (164 men, 236 women; ages 20–24 years) in the fifth or seventh semester of Psychology (n = 200) or Business Administration (BBA; n = 200) programs at the University of Gujrat, recruited through convenient sampling. Alexithymia was measured through the Toronto Alexithymia Scale (TAS-20) and emotion regulation difficulties with the Difficulties in Emotion Regulation Scale–16 (DERS-16). The two measures were positively linked with $r(396) = .44$, $p < .001$. The demographic differences showed that BBA students scored slightly higher on externally oriented thinking, $t(398) = -2.14$, $p = .033$. In multiple regression, difficulty identifying feelings ($\beta = .22$), difficulty describing feelings ($\beta = .10$), and externally oriented thinking ($\beta = .24$) together explained 19.4% of the variance in emotion regulation difficulties, $F(3, 394) = 31.66$, $p < .001$. The findings are consistent with models that treat emotional awareness as a foundation for emotion regulation.

KEYWORDS: Alexithymia, Emotion Regulation, Difficulty in Emotion Regulation, University Students, Pakistan

Pages: 1 – 9
Volume: 5
Issue: 10 (October 2026)

Corresponding Author
Noreena Kausar
✉ noreena.kausar@uog.edu.pk

Cite this Article: Kausar, N., Arshad, M., & Nasir, E. (2026). Alexithymia and Difficulties in Emotion Regulation Among University Students. *The Regional Tribune, 5*(10), 1-9. https://doi.org/10.55737/trt/v-x.491

Introduction

Late adolescence and early adulthood are generally considered formative periods for identity exploration, emotional development, and increasing psychological independence (Arnett, 2000; Wood et al., 2017). During this period, many people start with university enrollment, where academic burdens, social adjustment, career uncertainty, and distance from family support lead towards sustained emotional challenges. Meeting these challenges depends on the ability to recognize and manage one's own emotions. These circumstances necessitate robust emotional regulation skills (Wood et al., 2017).

Alexithymia

The term *alexithymia*, literally "no words to describe emotions," was introduced by Sifneos (1973) to describe psychosomatic patients who had difficulty in recognizing and expressing emotions and who showed a solid, externally focused style of thinking. It is observed as a trans-diagnostic risk factor for emotional and behavioral problems in both clinical and nonclinical groups (Preece et al., 2022, 2023). The recent models in the literature describe it as a

multidimensional attribute including difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT; Bagby et al., 1994; Taylor et al., 1997).

Difficulty in Emotion Regulation

Emotion regulation refers to the processes through which people influence emotions they have, when they have them, and how they experience and express them. In Gross's (2015) process model, regulation unfolds as a cycle in which a person recognizes the need to regulate, selects a strategy such as reappraisal or suppression, implements it, and monitors the outcome. Gratz and Roemer (2004) conceptualized difficulties in emotion regulation as a multidimensional problem that includes limited emotional awareness and clarity of emotional responses, difficulty pursuing goals and monitoring impulses when distressed, and limited access to effective strategies.

Alexithymia and Emotion Regulation

Theoretically, alexithymia and emotion regulation are closely linked. The attention-appraisal model of alexithymia maps the components of alexithymia onto the stages of Gross's process model, proposing that difficulties in directing attention to emotions and appraising them accurately disrupt later stages of regulation (Preece et al., 2017). Empirical findings are consistent with this account. Preece et al. (2022) found that emotion regulation difficulties helped explain why alexithymia is associated with symptoms of affective disorders, and Preece et al. (2023) reported that people higher in alexithymia more often used maladaptive strategies, such as expressive suppression and behavioral withdrawal, even after distress and demographic factors were considered. Among psychiatric outpatients, emotion regulation difficulties also accounted for the association between interoceptive awareness and alexithymia (Türkel et al., 2025).

Studies of university students generally find that alexithymia and emotion regulation difficulties go together. Vaiouli and Panayiotou (2021) found that all three alexithymia components were positively correlated with emotion regulation difficulties among 275 college students. Chen et al. (2011) studied 1,788 healthy Chinese college students and, using cluster analysis, showed that alexithymia profiles with high DIF and DDF scores were characterized by more suppression and poorer emotional health. Among Iranian students, emotion regulation difficulties mediated the relationship between alexithymia and the tendency to use drugs (Hatami Nejad et al., 2025), and a network analysis of students with internet addiction linked externally oriented thinking to specific cognitive regulation strategies (Luo et al., 2022). Lyvers et al. (2020) reported that lower resilience, higher alexithymia, and greater perceived university stress were associated with anxiety and problematic alcohol use among Australian female university students.

Much of the student research has focused on medical students. In Saudi Arabia, alexithymia was significantly associated with depression among medical students (Aleisa et al., 2022), and a cross-sectional study in Peshawar, Pakistan, reported a high prevalence of alexithymia among medical students, with women more affected but no direct effect on academic performance (Khan et al., 2025).

Gaps in the Literature

Despite this progress, several limitations remain. First, most studies are cross-sectional and rely on self-report, which restricts causal inference and invites shared-method variance (Chen et al., 2011; Preece et al., 2022, 2023; Vaiouli & Panayiotou, 2021). Second, evidence from South Asia is scarce, and the Pakistani research that exists has focused largely on medical students (Khan et al., 2025). Because translation and cultural context can alter how TAS-20 items function (Ni & Fang, 2025; Schroeders et al., 2022), findings from Western or clinical samples cannot be assumed to generalize. Third, many studies analyze alexithymia as a single score even though its components may relate

differently to regulation difficulties (Chen et al., 2011; Luo et al., 2022; Vaiouli & Panayiotou, 2021). Finally, little is known about whether students in different academic disciplines, or at different points in their studies, differ in these characteristics.

The present study addressed these gaps by examining alexithymia and difficulties in emotion regulation among undergraduate students from a public university in Pakistan. The current study also examined which alexithymia components uniquely predicted emotion regulation difficulties.

Method

Research Design

The current study followed a cross-sectional correlational design, which is suited to examining the relationships among variables measured at a single point in time (Chen et al., 2011; Preece et al., 2022).

Participants

There were 400 undergraduate students who participated in the study and were enrolled in the BBA (n = 200) and Psychology (n = 200) programs at the University of Gujrat, Pakistan. There were 164 males (41.0%) and 236 females (59.0%), aged 20 to 24 years (M = 21.76, SD = 1.04); all were enrolled at the bachelor's (BS) level. Table 1 presents the full demographic profile.

The data were collected through convenience sampling from students who were willing to participate voluntarily and provide informed consent. Students were excluded if they declined to participate or did not complete the questionnaires, were outside the specified semesters or age range, or were currently receiving treatment for a psychiatric disorder.

Table 1

Demographic Characteristics of the Participants

Characteristic	*n*	%
Age (years)		
20	30	7.5
21	157	39.3
22	120	30.0
23	65	16.3
24	28	7.0
Gender		
Men	164	41.0
Women	236	59.0
Department		
Psychology	200	50.0
BBA	200	50.0
Semester		
Fifth	190	47.5
Seventh	210	52.5
Education level		
BS (bachelor's)	400	100.0

Note. N = 400. BBA = Bachelor of Business Administration. Percentages may not sum to 100.0 because of rounding. Age: M = 21.76, SD = 1.04.

Measures

Alexithymia: Alexithymia was measured with the Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994). Items are rated on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and form three subscales: difficulty identifying feelings (DIF; 7 items), difficulty describing feelings (DDF; 5 items), and externally oriented thinking (EOT; 8 items). Total scores range from 20 to 100, with higher scores demonstrating greater alexithymia. The following items were reversely coded (Items 4, 5, 10, 18, and 19). The total-scale Cronbach's α for the current study was .65.

Difficulties in Emotion Regulation: Difficulties in emotion regulation were recorded with the Difficulties in Emotion Regulation Scale (DERS-16; Bjureberg et al., 2016), a brief version (Gratz & Roemer, 2004). The items were rated from 1 (*almost never*) to 5 (*almost always*). Total scores range from 16 to 80, with higher scores showing greater difficulty. The total score reflects overall emotion regulation difficulty and was used in all analyses. In the present sample, α = .62.

Procedure

The participants were approached in their departments and invited to complete the questionnaires. Ethical approval was obtained from the University of Gujrat. All participants provided informed consent; participation in the study was voluntary, and they had the right to withdraw at any time; their responses were anonymous and kept confidential. Descriptive statistics and Cronbach's α were computed for all variables. Pearson product-moment correlations were used to evaluate the relationship between alexithymia and emotion regulation difficulties. An independent-samples t-test was used for mean differences. A multiple linear regression tested the study variables. Participants with incomplete data were excluded from analyses.

Results

Total TAS-20 scores ranged from 27 to 83 (M = 54.99, SD = 8.95), and total DERS-16 scores ranged from 22 to 66 (M = 44.01, SD = 7.63). Using conventional TAS-20 cutoffs, 124 students (31.0%) scored 51 or below, 184 (46.0%) scored 52 to 60, and 92 (23.0%) scored 61 or above. Skewness (−0.14 to 0.14) and kurtosis (−0.02 to 0.80) were within acceptable limits for all variables, and Levene's test was non-significant for every comparison (all $p > .05$), so equal variances were assumed. Descriptive statistics and reliabilities are shown in Table 2.

Table 2

Descriptive Statistics, Internal Consistency, and Pearson Correlations Among Study Variables

Variable	*M*	*SD*	α	1	2	3	4	5
1. TAS-20 total	54.99	8.95	.65	—				
2. DIF	19.38	3.87	.36	.78**	—			
3. DDF	13.54	3.19	.33	.49**	.22**	—		
4. EOT	22.07	4.40	.38	.84**	.46**	.33**	—	
5. DERS-16 total	44.01	7.63	.62	.44**	.36**	.13**	.38**	—

Note. N = 400 for TAS-20 variables and n = 398 for DERS-16. TAS-20 = Toronto Alexithymia Scale; DIF = difficulty identifying feelings; DDF = difficulty describing feelings; EOT = externally oriented thinking; DERS-16 = Difficulties in Emotion Regulation Scale–16. All correlations were significant at $p < .001$. Correlations between the TAS-20 total and its subscales are part–whole correlations.

The results of the correlation showed a positive relationship between total alexithymia and difficulties in emotion regulation, $r(396) = .44$, 95% CI [0.35, 0.51], $p < .001$ (Table 2). Students with higher alexithymia scores reported more difficulty regulating their emotions. Each alexithymia subscale was also positively correlated with DERS-16. The three subscales were also inter-correlated.

Group Differences

Table 3 presents independent-samples *t* tests comparing Psychology and BBA students (H2). Total alexithymia did not differ significantly between Psychology students ($M = 54.11$, $SD = 9.46$) and BBA students ($M = 55.86$, $SD = 8.34$), $t(398) = -1.96$, $p = .050$, $d = -0.20$, although the result was at the margin of significance and the confidence interval for the difference reached zero. Difficulties in emotion regulation also did not differ between Psychology students ($M = 44.74$, $SD = 8.22$) and BBA students ($M = 43.28$, $SD = 6.94$), $t(396) = 1.92$, $p = .056$, $d = 0.19$. At the subscale level, BBA students scored slightly higher than Psychology students on EOT, $t(398) = -2.14$, $p = .033$, $d = -0.21$, whereas DIF and DDF did not differ ($ps = .486$ and .088, respectively).

Table 3

Independent-Samples t Tests Comparing Psychology and BBA Students

Variable	Psychology *M* (*SD*)	BBA *M* (*SD*)	*t*	*df*	*p*	*d*	95% CI
TAS-20 total	54.11 (9.46)	55.86 (8.34)	−1.96	398	.050	−0.20	[−3.50, 0.00]
DIF	19.24 (4.09)	19.51 (3.65)	−0.70	398	.486	−0.07	[−1.03, 0.49]
DDF	13.27 (3.26)	13.81 (3.11)	−1.71	398	.088	−0.17	[−1.17, 0.08]
EOT	21.61 (4.27)	22.54 (4.49)	−2.14	398	.033	−0.21	[−1.80, −0.07]
DERS-16 total	44.74 (8.22)	43.28 (6.94)	1.92	396	.056	0.19	[−0.04, 2.96]

Note. Psychology $n = 200$ (DERS-16 $n = 198$); BBA $n = 200$. d = Cohen's d; CI = confidence interval for the mean difference (Psychology − BBA). Abbreviations are defined in the note to Table 2.

Table 4 presents the comparison of fifth- and seventh-semester students (H3). No significant semester differences were found for total alexithymia, $t(398) = 0.19$, $p = .851$, $d = 0.02$; difficulties in emotion regulation, $t(396) = -1.11$, $p = .267$, $d = -0.11$; or any alexithymia subscale (all $ps > .66$). Exploratory comparisons by gender were also non-significant for total alexithymia, $t(398) = -1.22$, $p = .222$, and emotion regulation difficulties, $t(396) = -0.82$, $p = .414$.

Table 4

Independent-Samples t Tests Comparing Fifth- and Seventh-Semester Students

Variable	Fifth *M* (*SD*)	Seventh *M* (*SD*)	*T*	*df*	*p*	*d*	95% CI
TAS-20 total	55.07 (8.39)	54.90 (9.45)	0.19	398	.851	0.02	[−1.59, 1.93]
DIF	19.43 (3.65)	19.33 (4.07)	0.25	398	.801	0.03	[−0.67, 0.86]
DDF	13.61 (2.99)	13.47 (3.36)	0.43	398	.664	0.04	[−0.49, 0.77]
EOT	22.04 (4.31)	22.10 (4.48)	−0.15	398	.878	−0.02	[−0.93, 0.80]
DERS-16 total	43.56 (7.44)	44.41 (7.79)	−1.11	396	.267	−0.11	[−2.36, 0.65]

Note. Fifth semester $n = 190$ (DERS-16 $n = 188$); seventh semester $n = 210$. d = Cohen's d; CI = confidence interval for the mean difference (fifth − seventh). Abbreviations are defined in the note to Table 2.

Alexithymia Components as Predictors of Emotion Regulation Difficulties

To test H4, a multiple linear regression predicted DERS-16 scores from DIF, DDF, and EOT (Table 5). The model was significant, $F(3, 394) = 31.66$, $p < .001$, and explained 19.4% of the variance in emotion regulation difficulties (adjusted $R^2 = .188$). All three predictors made a unique contribution: DIF ($\beta = .22$, $p < .001$), EOT ($\beta = .24$, $p < .001$), and DDF ($\beta = .10$, $p = .048$). The DDF coefficient was the smallest, and its confidence interval lower bound was close to zero. Variance inflation factors ranged from 1.25 to 1.39, the Durbin–Watson statistic was 1.73, and residuals did not depart from normality (Shapiro–Wilk $W = .997$, $p = .767$), indicating that the regression assumptions were met.

Table 5

Multiple Linear Regression Predicting Difficulties in Emotion Regulation (DERS-16) From Alexithymia Subscales

Predictor	*B*	*SE*	95% CI	β	*t*	*p*
(Constant)	23.47	2.15	[19.25, 27.69]		10.93	< .001
DIF	0.43	0.10	[0.22, 0.63]	.22	4.17	< .001
DDF	0.24	0.12	[0.00, 0.48]	.10	1.99	.048
EOT	0.41	0.09	[0.23, 0.59]	.24	4.45	< .001

Note. $N = 398$. *B* = unstandardized coefficient; *SE* = standard error; CI = confidence interval for *B*; β = standardized coefficient. $R^2 = .194$, adjusted $R^2 = .188$, $F(3, 394) = 31.66$, $p < .001$. Abbreviations are defined in the note to Table 2.

Discussion

This study observed the relationship of alexithymia and difficulties in emotion regulation among 400 undergraduate students in Pakistan and tested whether these variables differed by department and semester. In line with H1, students who reported greater alexithymia also reported greater difficulty regulating their emotions, and each alexithymia component uniquely predicted regulation difficulties. Group differences were small or absent, providing little support for H2 and no support for H3.

The moderate positive correlation between the alexithemia and emotion regulation difficulties is consistent with the attention-appraisal model, which holds that trouble attending to and appraising emotions undermines later stages of regulation (Preece et al., 2017, 2023). It also matches earlier reports of positive associations between alexithymia and regulation difficulties among students and adolescents (Demirpençe Seçinti & Sen, 2023; Vaiouli & Panayiotou, 2021) and the role of regulation difficulties in explaining the link between alexithymia and negative outcomes (Hatami Nejad et al., 2025; Preece et al., 2022; Türkel et al., 2025). The effect is moderate rather than large, however: alexithymia accounted for about 19% of the variance in regulation difficulties, so most of the variability reflects other factors, such as stress, coping resources, and personality.

The regression results add detail: externally oriented thinking was the strongest predictor, and their confidence intervals overlap substantially, so neither can be said to dominate. Difficulty identifying feelings fits the attention-appraisal account, because people who cannot tell what they feel have limited information with which to select or adjust a strategy. The contribution of externally oriented thinking suggests that a habit of focusing attention on external events rather than inner states may also limit regulation, which is in keeping with the subscale-level associations reported by Luo et al. (2022). Because externally oriented thinking is often the least reliable alexithymia subscale (Ni & Fang, 2025; Schroeders et al., 2022) and its internal consistency was low here, this result should be replicated before strong conclusions are drawn. DDF was a weaker and only marginally significant predictor (β =

.10, p = .048), which suggests that describing feelings contributes little beyond identifying them and orienting attention inward.

There were no differences between the emotion regulation difficulties of psychology and BBA students, and the difference in total alexithymia was at the edge of significance and small. BBA students performed slightly better on externally oriented thinking. One alternative that the present data do not rule out is that business training and coursework foster a more task-oriented, outward thinking style than psychology training does. The difference in externally oriented thinking should be considered tentative, as five variables were compared between two groups without correction for multiple testing. The overall pattern shows that emotional awareness and emotional regulation are common across both disciplines in the study, which aligns with the idea that developmental stage and academic stress may be more important than major areas of participants (Lyvers et al., 2020). Similarly, the lack of differences between fifth and seventh semester students suggests that alexithymia and regulation problems were comparable between these two consecutive semesters, but a longitudinal study would be required to assess changes within individuals.

Limitations and Future Directions

There are a number of limitations to be taken into account. First, the cross-sectional design does not allow for conclusions about causal direction, and second, regulation problems may affect emotional awareness (Preece et al., 2022; Vaiouli & Panayiotou, 2021). Secondly, both measures were self-report measures and may suffer from shared-method variance and response bias, especially for constructs related to limited emotional insight (Chen et al., 2011; Schroeders et al., 2022). Thirdly, internal consistency was of a moderate level, especially for the alexithymia subscales; both issues may attenuate associations, and there is a need for verification of the translation, administration, and coding procedures. Fourth, the convenience sampling of one public university and two departments reduces the generalizability of the current findings, and no covariate measures were taken, including academic stress and family background.

Longitudinal designs are needed to better understand the temporal ordering of alexithymia and regulation difficulties (Preece et al., 2017, 2023), multimethod assessment (behavioural tasks, informant reports, or physiological indicators), and mediation and moderation models of stress and psychological outcomes.

Conclusion

Among undergraduate students at a Pakistani university, greater alexithymia was moderately associated with greater difficulty in emotion regulation, and difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking each contributed to this association. Levels of both constructs were similar across departments and semesters. These findings underscore the importance of emotional awareness for emotion regulation in emerging adulthood and point to the value of early identification and skills-based support for students.

References

Aleisa, M., Abdullah, N., Alqahtani, A., Aleisa, J., Algethami, M., & Alshahrani, N. (2022). Association between alexithymia and depression among King Khalid University medical students: An analytical cross-sectional study. *Healthcare, 10*(9), Article 1703. https://doi.org/10.3390/healthcare10091703

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale—I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*(1), 23–32. https://doi.org/10.1016/0022-3999(94)90005-1

Bjureberg, J., Ljótsson, B., Tull, M. T., Hedman, E., Sahlin, H., Lundh, L.-G., Bjärehed, J., DiLillo, D., Messman-Moore, T., Gumpert, C. H., & Gratz, K. L. (2016). Development and validation of a brief version of the Difficulties in Emotion Regulation Scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment, 38*(2), 284–296. https://doi.org/10.1007/s10862-015-9514-x

Chen, J., Xu, T., Jing, J., & Chan, R. C. K. (2011). Alexithymia and emotional regulation: A cluster analytical approach. *BMC Psychiatry, 11*, Article 33. https://doi.org/10.1186/1471-244X-11-33

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Demirpençe Seçinti, D., & Sen, E. (2023). Reliability and validity of the brief version of the Difficulties in Emotion Regulation Scale in a sample of Turkish adolescents. *BMC Psychology, 11*. https://doi.org/10.1186/s40359-023-01199-y

González-Arias, M., Martínez-Molina, A., Galdames, S., & Urzúa, A. (2018). Psychometric properties of the 20-item Toronto Alexithymia Scale in the Chilean population. *Frontiers in Psychology, 9*, Article 963. https://doi.org/10.3389/fpsyg.2018.00963

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41–54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry, 26*(1), 1–26. https://doi.org/10.1080/1047840X.2014.940781

Hatami Nejad, M., Sadeghi, M., Damirchi, S., & Homayoon, M. (2025). Examining the influence of alexithymia, gender, and age on drug use among Iranian students: The mediating role of emotion regulation difficulties. *Scientific Reports, 15*, Article 3650. https://doi.org/10.1038/s41598-025-87394-w

Khan, L., Noor, B., Gul, N., Khan, A., Ullah, S., Hafza, B., Khan, I., Khan, U., Haq, I., Shahzad, F., & Ullah, F. (2025). Exploring the prevalence of alexithymia among medical students and its impact on their academic performance: A cross-sectional study in Peshawar, Pakistan. *Biological and Clinical Sciences Research Journal, 6*(3), Article 1655. https://doi.org/10.54112/bcsrj.v6i3.1655

Luo, H., Gong, X., Chen, X., Hu, J., Wang, X., Sun, Y., Li, J., Lv, S., & Zhang, X. (2022). Exploring the links between alexithymia and cognitive emotion regulation strategies in internet addiction: A network analysis model. *Frontiers in Psychology, 13*, Article 938116. https://doi.org/10.3389/fpsyg.2022.938116

Lyvers, M., Holloway, N., Needham, K., & Thorberg, F. A. (2020). Resilience, alexithymia, and university stress in relation to anxiety and problematic alcohol use among female university students. *Australian Journal of Psychology, 72*(1), 59–67. https://doi.org/10.1111/ajpy.12258

Ni, Y., & Fang, S. (2025). Does the Chinese version of 20-item Toronto Alexithymia Scale (TAS-20-C) measure alexithymia in Chinese young adolescents? Evidence from confirmatory factor analysis, network analysis, and latent profile analysis. *BMC Psychology, 13*. https://doi.org/10.1186/s40359-025-03028-w

Parker, J. D. A., Taylor, G. J., & Bagby, R. M. (2003). The 20-Item Toronto Alexithymia Scale: III. Reliability and factorial validity in a community population. *Journal of Psychosomatic Research, 55*(3), 269–275. https://doi.org/10.1016/S0022-3999(02)00578-0

Preece, D., Becerra, R., Allan, A., Robinson, K., & Dandy, J. (2017). Establishing the theoretical components of alexithymia via factor analysis: Introduction and validation of the attention-appraisal model of alexithymia. *Personality and Individual Differences, 119*, 341–352. https://doi.org/10.1016/j.paid.2017.08.003

Preece, D. A., Mehta, A., Becerra, R., Chen, W., Allan, A., Robinson, K., Boyes, M., Hasking, P., & Gross, J. J. (2022). Why is alexithymia a risk factor for affective disorder symptoms? The role of emotion regulation. *Journal of Affective Disorders, 296*, 337–341. https://doi.org/10.1016/j.jad.2021.09.085

Preece, D. A., Mehta, A., Petrova, K., Sikka, P., Bjureberg, J., Becerra, R., & Gross, J. J. (2023). Alexithymia and emotion regulation. *Journal of Affective Disorders, 324*, 232–238. https://doi.org/10.1016/j.jad.2022.12.065

Schroeders, U., Kubera, F., & Gnambs, T. (2022). The structure of the Toronto Alexithymia Scale (TAS-20): A meta-analytic confirmatory factor analysis. *Assessment, 29*, 1806–1823. https://doi.org/10.1177/10731911211033894

Sifneos, P. E. (1973). The prevalence of "alexithymic" characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics, 22*(2–6), 255–262. https://doi.org/10.1159/000286529

Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (1997). *Disorders of affect regulation: Alexithymia in medical and psychiatric illness*. Cambridge University Press.

Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (2003). The 20-Item Toronto Alexithymia Scale: IV. Reliability and factorial validity in different languages and cultures. *Journal of Psychosomatic Research, 55*(3), 277–283. https://doi.org/10.1016/S0022-3999(02)00601-3

Türkel, N., Aksu, M., Ertek, İ., & Coşar, B. (2025). The effect of emotion regulation difficulties on interoceptive awareness and alexithymia: An example of consultation-liaison psychiatry. *Psychiatry Investigation, 22*, 906–913. https://doi.org/10.30773/pi.2024.0368

Vaiouli, P., & Panayiotou, G. (2021). Alexithymia and autistic traits: Associations with social and emotional challenges among college students. *Frontiers in Neuroscience, 15*, Article 733775. https://doi.org/10.3389/fnins.2021.733775

Wood, D., Crapnell, T., Lau, L., Bennett, A., Lotstein, D., Ferris, M., & Kuo, A. (2017). Emerging adulthood as a critical stage in the life course. In N. Halfon, C. B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of life course health development* (pp. 123–143). Springer.