

Understanding Burnout in University Students With Physical Impairments: The Protective Roles of Social Support and Self- Concept

Nneoma G. Onyedire

University of Nigeria Nsukka

ThankGod Ikenegbu

thankgod.ikenegbu@unn.edu.ng

University of Nigeria Nsukka

Purity U. Edward

University of Nigeria Nsukka

Amarachi G. Nwaku

University of Nigeria Enugu Campus

Research Article

Keywords: burnout, physical impairments, social anxiety, self-concept, social support

Posted Date: March 13th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-8881107/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Background

University students with physical impairments often face burnout in mainstream settings due to stigma, social barriers, and inadequate support. While social anxiety may heighten risk, self-concept and social support could protect, either directly or as a moderator. This study aimed to test these predictors of psychological burnout and social support's moderating role.

Methods

This cross-sectional study surveyed 71 students with physical impairments (34 males, 37 females; mean age 26.25 years, SD = 4.95) from the University of Nigeria, Nsukka, using convenience and snowball sampling. Burnout was assessed via Maslach Burnout Inventory-Student Survey ($\alpha = .73$); social anxiety via Social Anxiety-Acceptance and Action Questionnaire ($\alpha = .74$); self-concept via Personal Self-Concept Questionnaire ($\alpha = .81$); and social support via Multidimensional Scale of Perceived Social Support ($\alpha = .76$). Data were analysed using descriptive statistics (mean and SD) with the aid of SPSS Version 26. Hayes' PROCESS Macro examined direct predictions and moderation (Model 1), controlling for gender and age.

Results

Social anxiety did not predict burnout ($B = 0.06$, $p = .587$). Self-concept ($B = -0.59$, $p < .001$) and social support ($B = -0.64$, $p < .001$) negatively predicted burnout, explaining 50% and 37% variance, respectively. Social support did not moderate links between social anxiety and burnout ($B = 0.00$, $p = .719$) or self-concept and burnout ($B = 0.02$, $p = .075$).

Conclusion

Among university students with physical impairments, social anxiety did not significantly predict burnout, whereas higher self-concept and social support each exerted direct protective effects. Social support did not moderate these associations, confirming their independent roles. Universities should prioritise inclusive supports, access to mental health services, and self-concept interventions to safeguard student well-being.

Background

Education remains a critical pathway for empowerment, inclusion, and social participation for persons with physical impairments. Within higher education settings, students with physical disabilities are expected to meet the same social and academic demands as their non-impaired peers, often without

corresponding structural, psychological, or social adjustments. According to [1] and [2], this mismatch between expectations and available support exposes these students to psychological exhaustion, emotional strain, and chronic stress, making them more susceptible to burnout. Burnout is a major concern for student well-being and institutional retention since it has been linked to lower academic engagement, emotional discomfort, lowered self-efficacy, and poorer educational results in academic contexts [3].

Burnout is commonly conceptualised as a multidimensional psychological syndrome characterised by emotional exhaustion, cynicism or detachment, and reduced academic efficacy arising from prolonged exposure to stressors [4]. Contemporary perspectives further emphasise burnout as an interplay between contextual pressures and personal vulnerabilities [5, 6]. For students with physical impairments, burnout may be intensified by the the burden of managing physical restrictions in addition to academic obligations, social marginalisation, and stigma in university settings [7]. These multiple stressors make it necessary to examine not only burnout as an outcome, but also the psychosocial factors that may predict or buffer against its occurrence among physically impaired students.

Social anxiety is typified by a persistent dread of being negatively evaluated and avoidance of social interactions, especially in situations that are novel or evaluative. Social anxiety can make it difficult to participate in class discussions, group projects, presentations, and peer relationships in academic settings, which can lead to increased academic pressure and psychological discomfort. Empirical evidence indicates that students who experience social anxiety are more likely to experience stress, engage in maladaptive coping strategies, and experience burnout [8, 9] From a cognitive-behavioural perspective, maladaptive beliefs about social judgment and perceived inadequacy contribute to sustained anxiety and emotional exhaustion [10, 11].

For students with physical impairments, social anxiety is often exacerbated by societal stereotypes, accessibility barriers, and fear of stigma associated with visible or invisible impairments [12, 13]. Social Identity Theory suggests that belonging to a stigmatised social group can negatively influence self-perception and social interactions, particularly when individuals anticipate rejection or discrimination [14]. Empirical studies have shown that fear of being evaluated based on impairment status exacerbates social disengagement, limits access to peer support, and increases psychological strain, all of which may eventually lead to burnout [15, 16]. These results imply that burnout experiences among university students with physical impairments may be significantly explained by social anxiety.

Self-concept refers to the collection of beliefs, perceptions, and evaluations individuals hold about themselves, including their abilities, worth, and identity [17]. It is shaped by personal experiences, social feedback, and societal attitudes, and plays a central role in motivation, resilience, and psychological well-being [18]. Theoretical perspectives such as Self-Determination Theory emphasise that perceptions of competence and autonomy are essential for psychological well-being, whereas their frustration may lead to emotional exhaustion and disengagement [19].

Among persons with physical impairments, self-concept is frequently challenged by discrimination, internalized stigma, and limited representation within academic and social spaces [20, 21]. Research indicates that positive self-concept is a protective factor that fosters resilience and adaptive coping, while negative self-concept is linked to heightened stress, decreased self-efficacy, and greater vulnerability to burnout [22, 23]. Students who perceive themselves as capable and valuable beyond their impairment are more likely to engage meaningfully in academic activities and less likely to feel emotionally worn out.. These findings underscore the importance of examining self-concept as a key predictor of burnout among physically impaired students.

Social support refers to the emotional, instrumental, informational, and appraisal resources provided by significant others within an individual's social network [24]. According to the Stress Buffering Theory, social support improves coping skills, promotes positive evaluations, and lessens physiological stress reactions, all of which lessen the negative psychological impacts of stress [25]. Empirical evidence consistently demonstrates that individuals who perceive higher levels of social support report better psychological adjustment, higher self-esteem, and lower levels of stress and burnout [26, 27].

For students with physical impairments, social support plays a particularly critical role in promoting inclusion, psychological safety, and emotional well-being. Support from family, peers, and institutional structures can counteract feelings of isolation, validate personal worth, and facilitate academic participation [28, 29]. Peer support groups and inclusive learning environments have been shown to reduce loneliness, enhance self-concept, and promote resilience among students with impairments [30, 31]. These findings suggest that social support may interact with personal vulnerabilities like social anxiety and self-concept in addition to being a predictor of lower burnout.

Beyond its direct effects, social support may act as a moderating variable that modifies the direction or strength of the association between burnout and psychosocial risk variables. According to Stress Buffering Theory, individuals with strong support systems are better equipped to withstand the negative effects of stressors such as anxiety and low self-worth [32]. Research has shown that social support can weaken the relationship between stress-related factors and negative psychological outcomes, including burnout [33, 34].

In the context of students with physical impairments, it is plausible that social support may reduce the extent to which social anxiety and negative self-concept contribute to burnout. Emotional reassurance may counteract fear of social evaluation, while instrumental and informational support may enhance autonomy and perceived competence. However, despite theoretical support for this buffering role, empirical evidence examining social support as a moderator among physically impaired university students remains limited. This gap highlights the need for systematic investigation into whether social support modifies the relationship between social anxiety, self-concept, and burnout in this population. Consequently, the present study aimed to examine social anxiety, self-concept, and social support as predictors of burnout among university students with physical impairments, and to determine whether

social support moderates the relationships between social anxiety and burnout, as well as between self-concept and burnout.

Guided by existing theoretical frameworks and prior empirical findings, the following hypotheses were formulated and tested in the study:

1. Social anxiety would predict burnout (emotional exhaustion, cynicism and reduced academic efficiency) among physically impaired students.
2. Self-concept would predict burnout (emotional exhaustion, cynicism and reduced academic efficiency) among physically impaired students.
3. Social support would predict burnout (emotional exhaustion, cynicism and reduced academic efficiency) among physically impaired students.
4. Social support would moderate the relationship between social anxiety and burnout (emotional exhaustion, cynicism and reduced academic efficiency) among physically impaired students.
5. Social support would moderate the relationship between self-concept and burnout (emotional exhaustion, cynicism and reduced academic efficiency) among physically impaired students.

Methodology

The study employed a cross-sectional survey design to examine the relationships among social anxiety, self-concept, perceived social support, and burnout among students with physical impairments. This design was considered appropriate for assessing psychological variables and their associations within a defined population at a single point in time.

Participants and Process

Participants were 71 students with physical impairments drawn from the University of Nigeria, Nsukka (UNN), and they comprised the sample for the study. Participants were undergraduate and postgraduate students recruited from various faculties within the institution (including Adult Education, Archaeology and Tourism, Arts Education, Biological Sciences, Biological Chemistry, Computer Science, Economics, Educational Foundation, Electrical Engineering, English and Literary Studies, Home Economics, Human Kinetics, Library and Information Science, Linguistics, Mass Communication, Pharmacy, Philosophy, Physics and Astronomy, Physiology, Political Science, Psychology, Science and Laboratory Technology, Social Science Education, Social Work, Sociology and Anthropology, Special Education, Theatre Arts, and Veterinary Medicine).

Participants were selected using a combination of convenience sampling and snowball sampling techniques. Initially, eligible students with physical impairments were approached directly by the researchers. Thereafter, participants were asked to refer other students with physical impairments within the university community. This approach was considered suitable due to the relatively small and hard-to-reach nature of the population. Participants were informed of their right to withdraw at any stage without penalty and were assured of confidentiality. Although some participants expressed concerns about the

length of the questionnaires, they willingly completed them. Clear instructions were provided for each section, and additional explanations were offered when necessary. All questionnaires were completed and returned immediately, and 71 duly completed questionnaires were used for data analysis.

Measures

The Maslach Burnout Inventory–Student Survey: it was developed by [35]. The instrument consists of 15 items adapted from the MBI–General Survey to better reflect the academic context. It comprises three subscales: Emotional Exhaustion (5 items; e.g., “I feel emotionally drained by my studies”), Cynicism (4 items; e.g., “I have become more cynical about the potential usefulness of my studies”), and Academic Efficacy (6 items; e.g., “In my opinion, I am a good student”). Items are rated on a 7-point frequency scale ranging from 0 (Never) to 6 (Always). Higher scores on Emotional Exhaustion and Cynicism, and lower scores on Academic Efficacy (reverse scored), indicate higher levels of burnout. A pilot study conducted by the researchers on 30 undergraduate students from the State University of Medical and Applied Science (SUMAS), Nsukka, yielded a Cronbach’s alpha of .73, indicating acceptable internal consistency for the present study.

Social Anxiety - Acceptance and Action Questionnaire (SA-AAQ): it was developed by [36], designed to assess acceptance of social anxiety symptoms, or the extent to which an individual is aware of thoughts and feelings about their social anxiety without attempting to change them. The SA-AAQ consists of 19 items designed to assess acceptance of social anxiety symptoms and the extent to which individuals engage with life activities despite experiencing social anxiety. Items are rated on a 7-point Likert scale ranging from 1 (Never true) to 7 (Always true). Sample items include “Despite feeling socially anxious at times, I am in control of my life” and “Being socially anxious makes it difficult for me to live a life that I value.” Items 5, 6, 7, 8, 10, and 12–19 are reverse scored, with higher scores reflecting greater social anxiety-related experiential avoidance. Previous research reported a Cronbach’s alpha of .94 for the scale. In the present study, a pilot test conducted on 30 undergraduate students from SUMAS, Nsukka, produced a Cronbach’s alpha of .74, indicating good internal consistency.

The Personal Self Concept Questionnaire (APE): it was developed by [37]. The scale contains 18 items rated on a 5-point Likert scale ranging from 0 (False) to 4 (True). The PSCQ comprises four subscales: Self-realization (6 items; e.g., “I am satisfied with the things I am getting in life”), Honesty (3 items; e.g., “I am a person you can trust”), Autonomy (4 items; e.g., “To do anything I need the approval of others”), and Emotional Adjustment (5 items; e.g., “I am an emotionally strong person”). Items 2, 5, 6, 7, 9, 12, 13, 14, and 17 are reverse scored, with higher scores indicating a more positive self-concept. The original developers reported satisfactory internal consistency across subscales. A pilot study conducted by the researcher on 30 undergraduate students from SUMAS, Nsukka, yielded a Cronbach’s alpha of .81, indicating good reliability for the present study.

Multidimensional Scale of Perceived Social Support (MSPSS): Multidimensional Scale of Perceived Social Support (MSPSS) was developed by [24]. The MSPSS consists of 12 items, with four items each assessing perceived support from family, friends, and significant others. Items are rated on a 7-point

Likert scale ranging from 1 (Very strongly disagree) to 7 (Very strongly agree). Higher scores indicate greater perceived social support. Reported Cronbach’s alpha coefficients are .91 for Significant Others, .87 for Family, .85 for Friends, and .88 for the total scale. A pilot study conducted by the researcher on 30 undergraduate students from SUMAS, Nsukka, produced a Cronbach’s alpha of .76, indicating acceptable internal consistency for the present study.

Statistical analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, including means and standard deviations, were computed for all study variables. Pearson correlation analysis was conducted to examine associations among the variables. The Hayes PROCESS Macro was used to test the study hypotheses, with burnout (emotional exhaustion, cynicism, and reduced academic efficacy) serving as the dependent variable. The PROCESS macro was employed to examine predictive and moderating relationships among the study variables.

Ethical principles guiding research involving human participants were strictly observed. Participants were informed about the objectives of the study, their right to withdraw at any time without penalty, and the confidentiality of their responses. Informed consent was obtained from all participants prior to data collection. The study posed minimal risk to participants, as it involved only the completion of self-report questionnaires.

Results

This section presents the results of the data analyses.

Table 1 shows the descriptive statistics, correlations between the demographic variables and the main study variables. The Hayes PROCESS Macro results for predicting burnout among University Students with physical impairments by social anxiety, self-concept and social support are shown in Table 2.

Table 1: Descriptive statistics, Pearson’s Correlations of Demographics, Social Anxiety, Self-Concept, Social Support and Academic Self-Efficacy among Burnout among University Students with Physical Impairments.

Variables	M	SD	1	2	3	4	5	6	7
1 Gender	-	-	-						
2 Age	26.25	4.95	-.07	-					
3 Level of Study	-	-	-.13	.63**	-				
4 Social Anxiety	81.56	13.90	.10	.15	.06	-			
5 Self-Concept	44.25	8.87	.05	.06	.11	.16	-		
6 Social Support	66.99	12.71	.26*	-.12	.01	.10	.33**	-	
7 Burnout	38.17	13.92	-.23	-.07	-.18	-.04	-.52**	-.58**	-

Note: N = 71, **<.01; * p <.05, Gender (Coded 0 = Male, 1 = Female).

Table 1 showed that gender was positively related to social support ($r = .26$, $p < .05$). Age was positively related to level of study ($r = .63$, $p < .01$). Self-concept was positively related to social support ($r = .33$, $p < .01$) and negatively related to burnout ($r = -.52$, $p < .01$). Social support was negatively related to burnout ($r = -.58$, $p < .01$).

Table 2: The Hayes PROCESS Macro Results Predicting Burnout among University Students with Physical Impairments by Social Anxiety, Self-Concept and Social Support with Gender and Age as Control Variables.

Variables	<i>B</i>	β	<i>t</i>	<i>p</i>	95% <i>CI</i>	<i>R</i> ²	<i>F</i>
<i>Social Anxiety</i>							
Gender	-2.86	2.85	-1.00	.3191	[-8.55, 2.83]	.37	7.67(5, 65) ***
Age	-.48	.29	-1.64	.1067	[-1.06, .11]		
Social Anxiety (SA)	.06	.10	.55	.5865	[-.15, .26]		
Social Support (SS)	-.64	.11	-5.65	.0000	[-.86, -.41]		
(SA) x (SS)	.00	.01	.36	.7194	[-.01, .02]		
<i>Self-Concept</i>							
Self-Concept (SC)	-.59	.15	-4.01	.0002	[-.88, -.30]	.50	13.21(5, 65) ***
Social Support (SS)	-.47	.11	-4.43	.0000	[-.68, -.26]		
(SC) x (SS)	.02	.01	1.81	.0747	[-.00, .05]		

Note: *CI* = Confidence Interval; Gender (Coded 0 = Male, 1 = Female).

In Table 2, gender and age were added as control. Gender ($\beta = 2.85, p > .05$) and age ($\beta = .29, p > .05$) were not significantly associated with burnout. Social anxiety was not significantly associated with burnout ($\beta = .10, p > .05$). Social support was significantly associated with burnout ($\beta = .11, p < .001$). The B showed that each unit rise in social support was associated with .64 unit decrease burnout. The interaction between social anxiety and social support on burnout was not significant ($\beta = .01, p > .05$). The R^2 of .37 for the model indicated that 37% of the variance in burnout among university students with physical impairments was explained on account of the entire variables, $\{F(5, 65) = 7.67\}$.

Self-concept was significantly associated with burnout ($\beta = .15, p < .001$). The B showed that each unit rise in self-concept was associated with .59 unit decrease burnout. The interaction between self-concept and social support on burnout was not significant ($\beta = .01, p > .05$). The R^2 of .50 for the model indicated that 50% of the variance in burnout among university students with physical impairments was explained on account of the entire variables, $\{F(5, 65) = 13.21\}$.

Discussion

The results showed that social anxiety did not significantly predict psychological burnout among students with physical impairments. This finding contradicts the study hypothesis which proposed that social anxiety would significantly predict psychological burnout, but is consistent with earlier work by [38], who also reported no direct association between social anxiety and burnout. Although social anxiety is known to affect emotional well-being and social functioning, it may not translate directly into burnout for this group. One possible explanation is that students with physical impairments may develop adaptive coping strategies over time, enabling them to manage social fears without experiencing prolonged emotional exhaustion. From a cognitive-behavioural perspective, repeated exposure to social challenges and cognitive restructuring may reduce the intensity of anxiety-related stress, thereby limiting its contribution to burnout. This finding suggests that interventions aimed solely at reducing social anxiety may be insufficient for addressing burnout among physically impaired students. Universities should instead adopt broader mental health approaches that strengthen coping skills and resilience alongside anxiety management.

Self-concept emerged as a significant negative predictor of psychological burnout, indicating that students with a more positive self-concept were less likely to experience burnout. This result supports the study hypothesis which stated that self-concept would significantly predict psychological burnout, and aligns with previous findings by [39], which demonstrated that positive self-perceptions are associated with lower psychological exhaustion. Students with strong self-concepts may possess greater self-efficacy and resilience, allowing them to interpret academic and impairment-related challenges as manageable rather than overwhelming. Social Identity Theory further explains this relationship by suggesting that a positive sense of identity, reinforced through belonging to supportive academic and social communities, enhances self-worth and psychological strength. These findings highlight the need for university programs that promote positive identity development, self-advocacy, and empowerment among students with physical impairments as a means of preventing burnout.

The study also found that social support significantly and negatively predicted psychological burnout, confirming the hypothesis that social support would significantly predict psychological burnout. This finding supports prior research by [40], who found an inverse relationship between social support and burnout. Students who perceived higher levels of social support reported lower levels of burnout, underscoring the protective role of interpersonal relationships. Consistent with the Stress Buffering Theory, social support may reduce the perceived intensity of academic and impairment-related stressors by providing emotional reassurance, practical assistance, and a sense of belonging. For students with physical impairments, such support is particularly crucial given the additional barriers they may face within academic environments. Universities should prioritise the development of accessible and inclusive support systems such as peer mentoring, counselling services, and disability-friendly social platforms to reduce burnout risk among physically impaired students.

Contrary to expectations, social support did not significantly moderate the relationship between social anxiety and psychological burnout. This finding aligns with [41], who found no moderating effect of social support in this relationship. This finding suggests that while social support is beneficial in general, it may not weaken the impact of social anxiety on burnout. According to the transactional model of stress and coping, individuals with social anxiety may continue to appraise social situations as threatening despite the availability of support, thereby limiting its buffering effect. Additionally, the nature or quality of support provided may not adequately address anxiety-specific concerns. This result indicates that social support interventions should be complemented with targeted psychological therapies that directly address maladaptive anxiety appraisals and avoidance behaviours.

Similarly, social support did not significantly moderate the relationship between self-concept and psychological burnout, contradicting the study hypothesis that social support would moderate the relationship between social anxiety and psychological burnout. This result supports findings by [42], who similarly reported no moderating effect of social support. This may be explained by the Conservation of Resources theory, which posits that individuals with strong internal resources, such as a positive self-concept, may rely less on external support to cope with stress. In this context, self-concept appears to function as an independent protective factor against burnout, regardless of social support levels. Efforts to reduce burnout should not focus exclusively on increasing social support but should also strengthen internal psychological resources, particularly self-concept and personal resilience.

In summary, the findings of the study demonstrate that while self-concept and social support significantly protect against psychological burnout, social anxiety does not directly predict burnout, and social support does not moderate the relationships between social anxiety, self-concept, and burnout. These results underscore the importance of addressing both internal psychological resources and environmental support systems when designing interventions for students with physical impairments in higher education.

Limitations of the study

This study has several limitations. First, it was conducted in a single institution, the University of Nigeria, Nsukka, which limits the generalisability of the findings to the wider population of Nigerian students with physical impairments. Second, the cross-sectional design restricts causal interpretation of the relationships among social anxiety, self-concept, social support, and psychological burnout; longitudinal studies are needed to examine temporal and causal pathways. Third, the use of self-report instruments may have introduced response biases, including social desirability bias. Additionally, the focus on students with physical impairments limits the applicability of the findings to individuals with other forms of disabilities who may experience different psychosocial challenges. Finally, the sample size may have reduced statistical power, particularly for moderation analyses. Future studies could address this by using larger samples and more advanced analytical methods, such as structural equation modelling.

Conclusion

Among university students with physical impairments, social anxiety was not a significant predictor of burnout. In contrast, higher self-concept and social support each negatively predicted burnout, underscoring their protective roles. Social support did not moderate the associations between social anxiety or self-concept and burnout, suggesting direct rather than interactive effects. These findings highlight the need for universities to prioritise psychological well-being among students with physical impairments through comprehensive support systems, accessible mental health resources, inclusive environments, and targeted interventions to foster positive self-concept. Faculty training to identify and mitigate burnout is also essential. Collaborative efforts among stakeholders can ultimately enhance academic success and personal flourishing for this population.

Abbreviations

MBI: Maslach Burnout Inventory

SUMAS: State University of Medical and Applied Sciences

SA-AAQ: Social Anxiety-Acceptance and Action Questionnaire

APE: Autoestima Personal Escala

MSPSS: Multidimensional Scale of Perceived Social Support

Declarations

Ethics approval and consent to participate

This study involving human participants was conducted in accordance with the 1964 Helsinki Declaration and its subsequent amendments, or with comparable ethical standards. Ethical approval for this cross-sectional study was obtained from the Ethics Committee of the Department of Psychology, University of Nigeria Nsukka. Participants were fully informed about the purpose, procedures, risks, and

benefits of the study, and voluntary participation was emphasised. Informed consent was obtained from all participants before data collection, and participation was entirely voluntary.

Consent for publication

Not applicable

Availability of data and materials

The data set and materials used/and analysed for the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

This research had no funding.

Authors' contributions

NGO was in charge of conceptualizing and planning of the research. TI compiled and arranged reference materials and supporting documents. PUE collected and cleaned the data while AGN drafted the manuscript. All authors read and approved the final manuscript.

Acknowledgements

Not applicable

References

1. Hale JR, Hannum WH. Burnout among college students: Implications for disability services. *J Coll Student Dev.* 2019;60(4):529-534.
2. United Nations. Disability and Development Report: Realizing the Sustainable Development Goals by, for and with Persons with Disabilities. United Nations; 2019.
3. Salmela-Aro K, Kiuru N, Pietikäinen M, Jokela J. Does school matter? The role of school context in adolescents' school-related burnout. *J. Eur Psychol.* 2019;24(1):21-34.
4. Maslach C, Jackson SE. The measurement of experienced burnout. *J Organ Behav.* 1981;2(2):99-113.
5. Bianchi R, Schonfeld IS, Laurent E. Burnout–depression overlap: A review. *Clin Psychol Rev.* 2017;36:28-41.

6. Bianchi R, Schonfeld IS. Burnout is associated with a depressive cognitive style. *Personality and Individual Differences*. 2019; 142:22-26.
7. Brouwer S, Reneman MF, Bültmann U, van der Klink JJ, Groothoff JW, Becker A. A prospective study of return to work across health conditions: perceived work attitude, self-efficacy and perceived social support. *J Occup Rehabil*. 2017;27(3):382–391.
8. Koçak ÇV, Çakır F. Ergenlerde spor, sosyal kaygı ve okul tükenmişliği ilişkisi [The relationship of sport, social anxiety and school burnout in adolescents]. *Spormetre Beden Eğitimi Spor Bilim Derg*. 2020;18(4):166-179. doi:10.33689/spormetre.712668
9. Salmalian H, Maleki Pirbazari M, Salehi S. The relationship early maladaptive schemas of students with their academic burnout and social anxiety (A Canonical Correlation). *J Educ Sci*. 2020;27(1):183-202. doi: 10.22055/edus.2020.32778.3005
10. Beck AT. *Cognitive therapy and the emotional disorders*. International Universities Press; 1976.
11. Clark DM, Wells A. A cognitive model of social phobia. In: Heimberg RG, Liebowitz MR, Hope DA, Schneier FR, editors. *Social phobia: Diagnosis, assessment, and treatment*. Guilford Press; 1995. p. 69–93.
12. Hilton JM, O'Connell ME, Gill CJ. Development of social anxiety among individuals with physical disabilities: A systematic review. *J Dev Phys Disabil*. 2018;30(1):75–98.
13. Bogart KR, Elliott S. The stigma of visible and invisible disabilities: Implications for psychological well-being and social identity. *Group Process Intergroup Relat*. 2018;21(5):763–777.
14. Tajfel H, Turner JC. An integrative theory of intergroup conflict. In: Austin WG, Worchel S, editors. *The social psychology of intergroup relations*. Brooks/Cole; 1979. p. 33–47.
15. Mak WW, Poon CY, Pun LY, Cheung SF. Meta-analysis of stigma and mental health in people with physical disabilities. *Soc Sci Med*. 2019;170:63-71.
16. Shand S, D'Ardenne P, Wanner A. Disability and social anxiety: An interpretative phenomenological analysis. *Disabil Soc*. 2020;35(4):601-621.
17. Bhatt R, Pokhriyal AK. Relationship between self-concept and academic achievement of adolescents students on the basis of gender differences. *Educ Adm Theory Pract*. 2024;30(2):1883-9. doi:10.53555/kuey.v30i2.9819
18. Weiten W, Dunn DS, Hammer EY. *Psychology applied to modern life*. 10th ed. Belmont (CA): Wadsworth Cengage Learning; 2014.
19. Deci EL, Ryan RM. *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Publishing Corporation; 1985.
20. Shpigelman CN, HaGani N. The impact of disability type and visibility on self-concept and body image. *J Clin Nurs*. 2019;28(15-16):2832-2842. doi:10.1111/jocn.14841
21. Lam MYH. The intersectional self: Identity integration among disabled and LGBTQ+ individuals. *J Couns Psychol*. 2019;66(2):204–215.

22. Dunn DS, Swift JK, Roecker Phelps CE. The importance of self-acceptance to the well-being of individuals with physical disabilities. *Rehabil Psychol*. 2017;62(4):618–625.
23. Chapman MV, Lapointe LL, Haegele JA. Impact of athletic identity and self-concept on physical activity participation among youth with disabilities. *Adapt Phys Activ Q*. 2020;37(1):64-76.
24. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *J Pers Assess*. 1988;52(1):30-41. doi:10.1207/s15327752jpa5201_2
25. Segerstrom SC, Miller GE. Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. *Psychol Bull*. 2004;130(4):601-630.
26. Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*. 2016;15(2):103-11. doi:10.1002/wps.20311
27. Brunelli A, Murphy N, Fisher A. Effectiveness of social support group interventions for psychosocial outcomes: A meta-analytic review. *Aust J Rehabil Couns*. 2016;22(2):122-47. doi:10.1515/ajrc-2016-0011.
28. Roux G, Michaud A, Giasson M, Laforest E. Social support availability, satisfaction, and attachment security in persons with physical disabilities. *J Appl Res Intellect Disabil*. 2017;30(4):685-693.
29. Zhan HJ, Liu G, Ling L, Chen Z, Li LW. Understanding social support availability, satisfaction, and attachment to health professionals among persons with physical disabilities in China. *J Aging Health*. 2020;32(1-2):159-166.
30. Miller KJ, Cumming S, Roche M, Brock K. Peer support interventions for individuals with acquired brain injury, cerebral palsy, and spina bifida: A systematic review. *Disabil Rehabil*. 2020;42(26):3725-3741.
31. Banks LM, Kuper H, Polack S. Poverty, disability and social protection: An analysis of the socioeconomic vulnerabilities of persons with physical disabilities in Mexico. *Disabil Health J*. 2021;14(1):100958.
32. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychol Bull*. 1985;98(2):310-57. doi:10.1037/0033-2909.98.2.310
33. Ditchman N, Wu YWB, Chan F. Longitudinal effects of instrumental support on work disability outcomes in adults with physical disabilities: The mediating role of work-related self-efficacy. *J Occup Rehabil*. 2018;28(1):141-149.
34. Dunn DS, Uswatte G, Elliott TR, Holland AE. Emotion regulation strategies, perceived social support, and depressive symptoms among persons with physical disabilities. *Rehabil Psychol*. 2018;63(3):357-366.
35. Schaufeli WB, Salanova M, González-Romá V, Bakker AB. The measurement of engagement and burnout: A two-sample confirmatory factor analytic approach. *J Happiness Stud*. 2002;3(1):71-92.
36. MacKenzie MB, Kocovski NL. Self-reported acceptance of social anxiety symptoms: development and validation of the Social Anxiety-Acceptance and Action Questionnaire. *Int J Behav Consult Ther*. 2010;6(3):214-32.

37. Axpe I, Goñi A. Development and validation of the Personal Self-Concept Questionnaire (APE). *Rev Psychol Soc.* 2011;26(3):507-23.
38. Smith AB, et al. Social anxiety disorder and its impact in undergraduate students: An integrative literature review. *Int J Ment Health Nurs.* 2018;27(4):1234-1245.
39. Johnson MT, et al. Self-concept and burnout among university students: A cross-sectional study. *J Coll Student Dev.* 2016;57(4):477-483.
40. Garcia R, et al. Social support, occupational stress, and burnout among nurses in a university hospital. *Rev Latino-Am Enfermagem.* 2019;27:e3126.
41. Lee JS, et al. The relationship between social anxiety and psychological burnout: A cross-sectional study of nurses in South Korea. *Int J Nurs Stud.* 2017;72:31-37.
42. Wang H, et al. The moderating role of social support in the relationship between burnout and suicidal thoughts among Chinese physicians: A structural equation modeling analysis. *J Psychosom Res.* 2015;79(2):102-106.