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A concept analysis on academic psychological distress: implications for clinical practice

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Abstract
The aim of this paper was to provide a conceptual clarification of the emerging construct of academic psychological distress (APD). Based on the concept analysis method of Walker and Avant, attributes, antecedents, contributing factors, and consequences were isolated. Empirical referents were discussed, and model, borderline, and contrary cases were provided. In March 2024, a systematic search without time limit was conducted in the PsycINFO, PubMED, and SCOPUS databases according to the PRISMA method. Sixty-two articles met the inclusion criteria. The analysis of the literature revealed that APD is a negative emotional reaction that a student may exhibit in the face of perceived stressors in the university environment. In terms of defining attributes, it appears to be characterized primarily by anxiety and depressive states, accompanied by cognitive problems, somatic symptoms, and social impairment. Isolated antecedents include: low academic skills and dispositions, negative academic self-perception, and negative perceptions of various aspects of the university environment (teachers, peers, parents' academic-related expectations, academic climate and study program). Dysfunctional coping, insecure attachment, maladaptive perfectionism, and low levels of social support were found to be contributing factors. Other risk variables included being a first-generation student and co-occurring psychopathology. The consequences of APD were poor academic performance, dropping out, and poorer mental health. Recommendations for research and clinical practice are provided.

Keywords Academic psychological distress · University students · Higher education · Mental health · Concept analysis

Introduction

Entering university is a major life transition, involving specific developmental tasks that require complex processes of psychological restructuring and redefinition of student identity (Berzonsky & Kuk, 2000). Through mass higher education and the explosion of university enrollment worldwide, the university experience has become a kind of natural extension of school (Field & Morgan-Klein, 2010). However, what distinguishes the university period and sets it apart from previous stages of the educational pathway is its status of "liminality", which characterizes the status of the university student as an inherently transitory identity in which the most familiar aspects of the educational process are accompanied by the necessity to develop one's own personal professional project (Aittola, 1995).

Due to these particular characteristics, some authors have proposed the concept of university *studenthood* to describe the specific evolutionary stage and related developmental challenges associated with the university experience, which students need to master to effectively adapt to the academic context (Baker, 2006; Field & Morgan-Klein, 2010). These challenges may be a source of stress for many students as they leave a familiar educational environment to deal with more complex demands, such as developing independent time management, coping with exam pressures, and building a long-term career and work project (Sharp & Theiler, 2018). Moreover, these studenthood conflicts intersect with the specific tasks of emerging adulthood (Arnett, 2007) and thus provide the context for a dynamic interaction between

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the identity challenges of personal development on the one hand and academic challenges on the other (Baker, 2006). This implies that although many students are able to negotiate the psychological tasks of *studenthood* without difficulties, for others the adjustment to the university context may be problematic and accompanied by several emotional problems. Accordingly, recent research reveals a widespread prevalence of psychological distress among students in higher education (Settersten & Ray, 2010; Sheldon et al., 2021), with studies reporting prevalence rates of depression and anxiety symptoms in this population of around 30% (Bruffaerts et al., 2018; Ibrahim et al., 2013). In this population, however, subclinical conditions are recorded more frequently than diagnosable anxious or depressive psychopathologies (Eleftheriades et al., 2020).

According to one of the definitions widely used in the literature (Drapeau et al., 2012; Mirowsky & Ross, 2002), psychological distress is a state of emotional suffering characterized primarily by depression (e.g., loss of interest, sadness) and anxiety (restlessness and emotional tension), often accompanied by somatic symptoms (insomnia, fatigue, lack of energy). There are several etiological theories of distress, but the most widely accepted is Horwitz's (2007) "stress-distress model", according to which distress is conceptualized as a consequence of stress, which in turn results from the sum of two types of appraisals (Lazarus, 2006): a primary appraisal, in which individuals appraise the event as a threat to their integrity and well-being, and a secondary appraisal, which refers to their perception of their inability to cope with this threat. Although these situational antecedents are fundamental to the likelihood of a stress response occurring, the transition from stress to distress is not direct but, on the contrary, is moderated by a number of general factors, that can potentially exacerbate or mitigate the effects of stressors on mental health. A specific variant of the stress-distress model, for example, is the diathesis-stress model (Salomon & Jin, 2013; Zuckerman, 1999), according to which environmental stressors can only have detrimental effects on a person's well-being and health if individual vulnerabilities are present, including both trait variables such as personality and dysfunctional coping strategies (Folkman, 2010; Lazarus & Folkman, 1984). Within this stress-distress framework, distress can therefore be understood as a signal of an inadequate fit between the person and the environment, with any discrepancy between feedback from the social environment and individual identity meanings and values having the potential to cause anxiety, strain or tension (Burke, 1996; French et al., 1974; Thoits, 2013).

Turning to university student population, as distress is a multifaceted phenomenon that can be attributed to various potential factors, several studies have been conducted to identify the main associated risk factors. Several predictive variables have been identified, some of which are specifically associated with the academic context. Indeed, academic challenges are the stressors most frequently reported by university students and are among those that most significantly predict their emotional problems (Emmerton et al., 2024; Sharp & Theiler, 2018). Furthermore, studies show that negative affective reactions to the academic context, such as academic anxiety and academic-related learned hopelessness, are prevalent in today's student population (Au et al., 2009; Cassady et al., 2019; Thomas et al., 2017). In addition to affecting health and subjective well-being, the presence of negative affect in relation to the university context appears to increase the risk of dropping out and academic failure (Mirawdali et al., 2018; Shakir, 2014).

When considering students who seek help from university counseling services, academic concerns are prevalent in this population (Center for Collegiate of Mental Health, 2023), with the majority of them showing some degree of impairment in their academic performance, regardless of their primary problems (Krumrei-Mancuso et al., 2013). Importantly, among the main reasons students turn to counseling services, academic problems are the most frequently cited (Broglia et al., 2021; Rückert, 2015), over and above the presence of a psychiatric diagnoses. However, despite this evidence, the psychopathological model is largely predominant in the interpretation of students' emotional problems and the resulting intervention models used in university counselling services (Gallagher, 2012). This predominance often leads to the specificity of the context (i.e., university) within which these interventions are delivered being overlooked (Scruggs et al., 2023; Wallace, 2014) with academic issues usually being left unaddressed or addressed only peripherally.

Suggestions for the development of an alternative explanatory model come from recent studies that has proposed the construct of academic distress to define a pattern of negative emotional reactions that a student may exhibit in the face of the challenges associated with higher education. However, a closer examination of the literature reveals that the term has thus far been used without a clear conceptual basis to denote a poorly differentiated set of cognitive and affective dimensions, ranging from lack of motivation and concentration to lack of confidence in one's ability to complete studies, up to include the lack of interest and enjoyment in one's academic project (Cheng et al., 2020; Lockard et al., 2012; Locke et al., 2011). This lack of clarity underscores the need for a more comprehensive formulation of the construct to provide a new interpretive model that allows us to move beyond the partiality of the psychopathological model as the only explanatory model for student mental health problems.

Therefore, the aim of this paper is to provide a conceptual clarification of APD that can be used to gain a better

understanding of the current health needs of university students and also enable the development of targeted psychological interventions and prevention strategies. However, since the term distress refers to a non-specific negative reaction to a threat and can be used for both a biological and a psychological reaction (Ridner, 2003), we will refer to this domain-specific form of distress experienced by students as 'academic psychological distress' (APD). To formally guide this analysis, the Walker and Avant (2005) method was used, as it is a scientific procedure that has been employed extensively in the literature for the conceptual analysis of a large number of psychological constructs (Garcia-Dia et al., 2013; Meeberg, 1993; Ridner, 2004).

Method

Concept Analysis

According to the Walker and Avant (2005) method, a concept analysis consists of the following steps: (a) identifying a sample of studies for data extraction; (b) collecting the data and describing all uses of the concept in question; (c) isolating the defining attributes (i.e., critical characteristics that help to distinguish a concept from other related concepts and clarify its meaning); (d) determining the main antecedents (i.e., what must occur for the concept under consideration to take place) and consequences (i.e., the effects of the concept on health and behaviors); (e) defining the empirical references (i.e., the methods used to measure the construct under investigation); (f) offering examples of model, borderline, and contrary cases. As to this last point, the model case should show all the defining attributes of the concept, the borderline case should contain most but not all of the defining attributes, and the contrary case is an example of what the concept is not.

Given the above-mentioned importance of general factors beyond situational antecedents in determining the likelihood that a distress response will occur, a slight modification of Walker and Avant's (2005) method was used in this paper to include contributing factors in the analysis. In the current work, contributing factors were all those factors that interact with academic antecedents to determine whether and to what extent the student will experience APD.

The concept analysis was conducted by three evaluators. All reviewers are clinical psychologists. The first author is a researcher in clinical psychology and psychodynamic psychotherapist with many years of experience in university counseling, the second author is a PhD student in clinical psychology and psychodynamic psychotherapist in training, while the third author is a full professor of clinical psychology, psychodynamic psychotherapist and director of an Italian university center that provides psychological counseling services to students. The first and second authors conducted the analysis and the third author intervened as a judge in case of divergences. All reported cases (model, borderline, and contrary) were proposed by the first author, who drew on his clinical experience, and discussed in reflection sessions with the other authors.

Search Strategy

For the identification of a sample of studies for data extraction, a systematic search was conducted on March 1, 2024 in the databases PsycINFO, PubMED and SCOPUS according to the according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method (Page et al., 2021). Differently from the traditional method, in this case scientific works have been searched with the aim of finding theoretical definitions of the concept, as well as attributes and factors associated. The keywords used for the search were 'academic distress', 'psychological distress', 'emotional distress' and 'psychological distress', combined with descriptive terms such as 'university student*' OR 'college student*' OR 'higher education student*'. Reference lists and in-text citations were also searched for additional relevant studies.

Eligibility criteria

Articles that specifically addressed APD and provided a definition and/or a way to measure this type of distress were considered eligible for analysis. Articles that reported non-specific measures of distress were only considered if they included academic variables as antecedents. The rationale was to consider only the forms of distress that arise from academics and to partial out the effects of other potential causes. Exclusion criteria were: (1) non-empirical work that lacked a definition of the construct; (2) articles that focused on generic measures of distress but did not test or could not verify a predictive model with academic variables as antecedents. Non-English articles were also excluded.

Selection procedures

The initial search yielded a pool of 1,450 articles, of which 1,024 titles had to be checked after duplicates had been removed. Two researchers (the first and second authors) independently reviewed titles and abstracts and excluded studies that did not meet the inclusion criteria. A total of 96 full texts were found, and discrepancies were resolved by involving a senior reviewer (the last author). Of the full texts screened for relevance, a total of 36 articles that met the inclusion criteria were included. A further 26 studies

were identified through Google Scholar searches and reference searches, resulting in a total of 62 articles meeting the inclusion criteria (see Fig. 1 for the flowchart). Each full text was analyzed to extract the following information: Antecedents, Defining Attributes, Contributing Factors, and Consequences. Information on the distress measures used (i.e., Empirical References) was also collected for our analysis. These data were analyzed to identify a final conceptual structure of APD and to obtain an operational definition of the construct.

Results

Following the steps of the Walker and Avant (2005) method, we isolated the main characteristics, antecedents, contributing factors, and consequences of APD described in the literature (see Appendix for the summary of studies included in the final analysis). All these factors were then combined and incorporated into an integrated conceptual model of APD (see Fig. 2). The results of the individual steps of the literature concept analysis are presented in the following sections.

Definitions

The analysis of the selected studies confirmed the lack of conceptual clarity of APD. Of the 62 articles, 23 referred specifically to academic distress, while the others referred to non-specific distress, including emotional, psychological, or mental distress. Of those that focused specifically to academic distress, only 6 articles provided a definition (Andersen et al., 2021; Fleming et al., 2018; Ghosh et al., 2021; Lockard et al., 2012; Mcdermott et al., 2020; Naz et al., 2020).

Lockard et al. (2012, p. 243) defined academic distress as "concerns about [students'] academic motivation, confidence, concentration, enjoyment, and ability to complete their coursework". The same definition was used by Fleming et al. (2018) and Ghosh et al. (2021). Naz et al. (2020) defined academic distress as "combined effect of academic-related requirements that exceed the individual's accessible adaptive resources", while Andersen et al.'s (2021, p. 102) definition included "frequently feeling too anxious, depressed, or overwhelmed to study". Finally, Mcdermott et al. (2020, p. 3386) define APD as "perceptions that internal or external factors accompanied by perceptions that one is unlikely to persist to graduation has a negative impact on one's academics progress".

Despite the variety of definitions and tools used to operationalize the phenomenon, almost all studies shared the view that APD is a form of suffering that arises from difficulties in coping with academic stressors, with most of them considering academic stressors as antecedents.

Studies characteristics

Sample sizes ranged from 91 to 198,000 participants. Of the 62 studies, 27 (43.55%) were conducted in the US, while the others were conducted in different parts of the world, namely Canada ($n=5$; 3.1%) France ($n=1$; 1.61%), Malaysia ($n=2$; 3.23%), China ($n=1$; 1.61%), Italy ($n=3$; 4.83%), Japan ($n=2$; 2.23%), Spain ($n=2$; 2.23%), Germany ($n=1$; 1.61%), the UK ($n=4$; 6.45%), Australia ($n=4$; 6.45%), Pakistan ($n=1$; 1.61%), Israel ($n=1$; 1.61), Nigeria ($n=1$; 1.61%) and Switzerland ($n=1$; 1.61%). Finally, 6 (9,68%) studies included samples from different geographical areas. The year of publication of the studies ranged from 1986 to 2023.

Defining attributes

Regarding the defining characteristics of APD, the concept analysis of the literature reviewed seems to reveal four domains: affective, cognitive, somatic, and social.

The affective domain primarily included anxiety and depression, with some studies also emphasizing the role of dysphoric emotional states in the characterization of APD, namely irritability, frustration, anger, shame, upset, guilt, and hostility (Kanter Agliata & Renk, 2009; Holding et al., 2020; Julien et al., 2009; Morris et al., 2021; Padrón et al., 2021; Renshaw & Bolognino, 2016). Across studies, a variety of anxiety symptoms were detected: nervousness and restlessness, excessive academic preoccupation and worry, difficulty relaxing, feeling tense and under strain. As for the depressive subdomain, the affective states identified in the literature were: loss of interest in academics, lack of motivation to study, academic anhedonia, hopelessness, and feelings of worthlessness and lack of self-confidence as a student.

Cognitive problems included mainly lack of concentration, whereas somatic symptoms comprised insomnia, lack of energies, trembling, breathing difficulties, feeling of accelerated heartbeat and freezing.

Finally, social impairment was reported by several studies as another attribute of APD, consisting of feelings of isolation and loneliness at university (Morris et al., 2021; Solberg Nes et al., 2009).

Antecedents

The concept analysis of the literature revealed a large number of academic antecedents, which were grouped into two main classes: (1) intrapersonal factors, which referred to

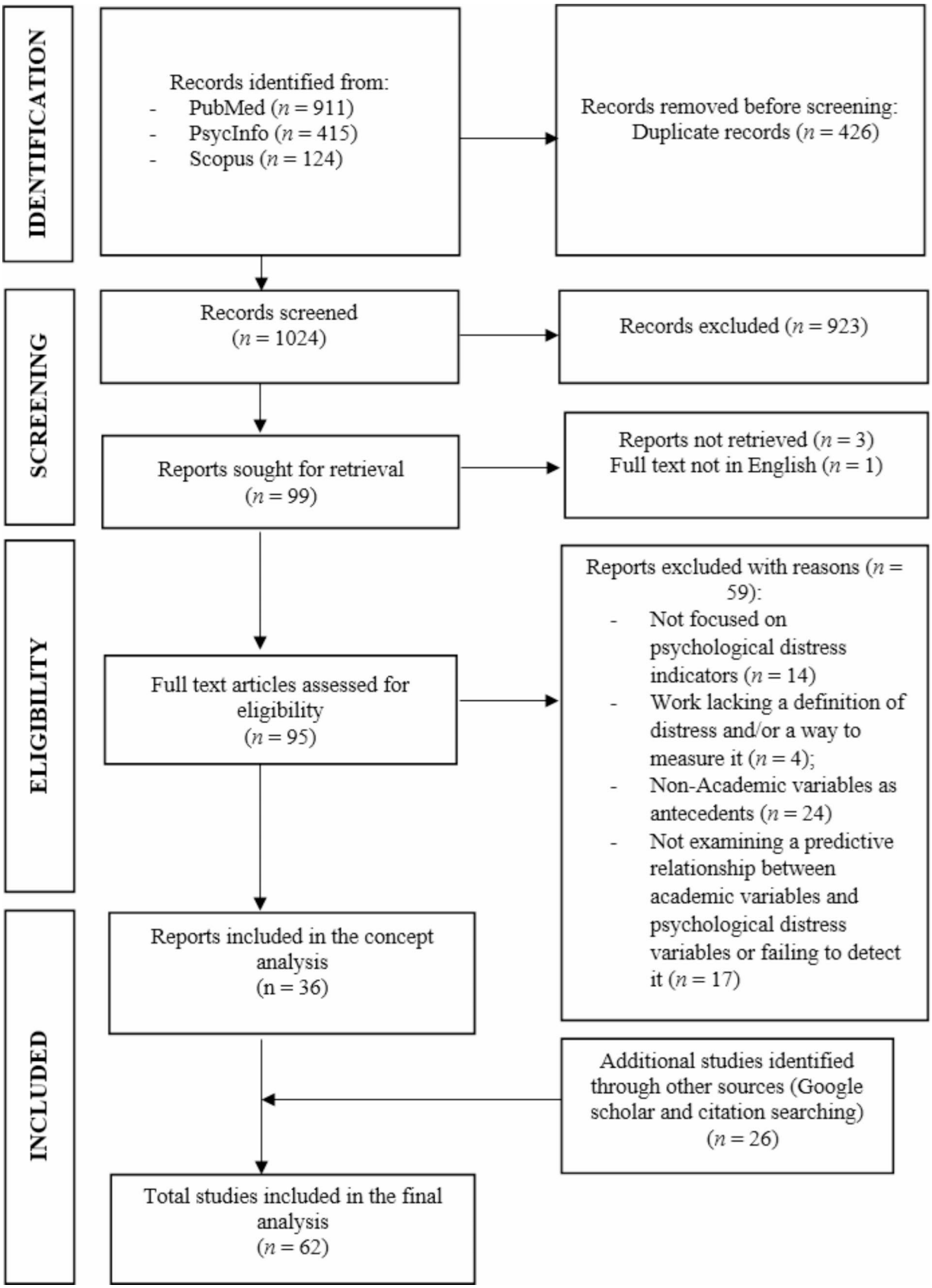

Fig. 1 PRISMA flowchart of the systematic search

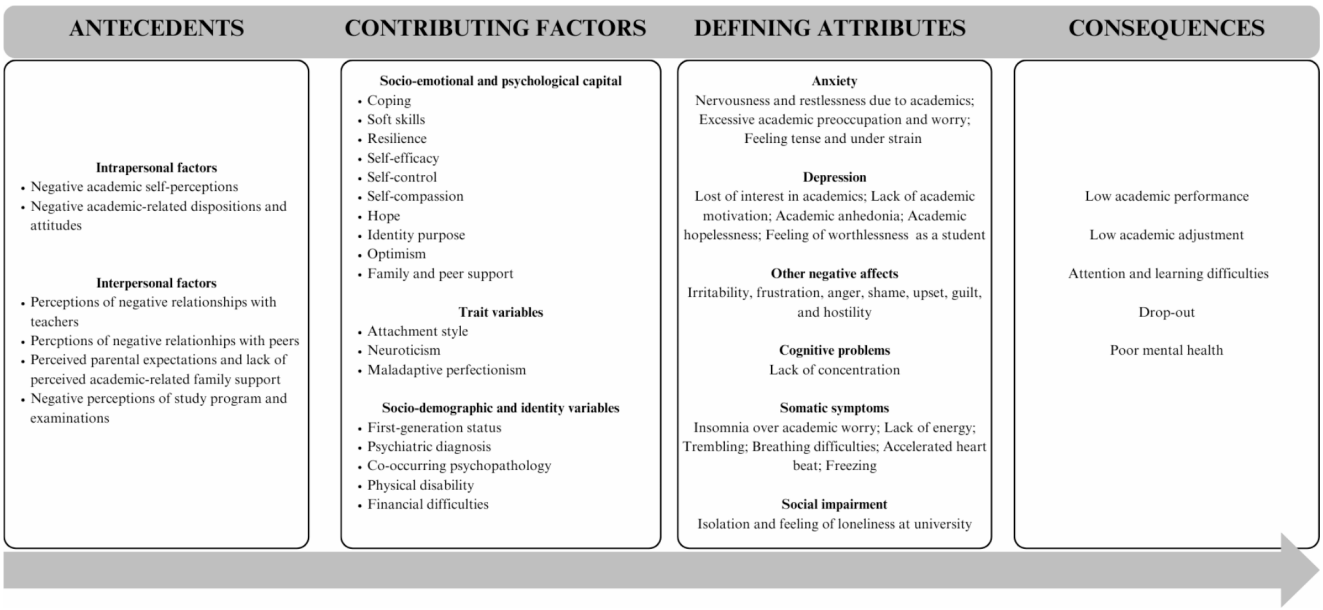

Fig. 2 Conceptual model of the academic psychological distress

academic self-perceptions, as well as academic-related dispositions and attitudes; and (2) interpersonal factors, which referred to students' perceptions of their relationship with various objects and aspects of the academic context.

Intrapersonal factors

Negative academic self-perceptions Negative academic self-perceptions have been identified as important antecedents to APD in several studies. These included negative self-perceptions in relation to learning strategies and skills developed to prepare for one's profession (Esquerda et al., 2023), as well as low self-efficacy beliefs regarding meeting deadlines and achieving successful goals (Casali et al., 2022; Quimby & O'Brien, 2006; Renshaw & Bolognino, 2016). Student self-role incongruence (i.e., the degree of incongruence between subjects' self-assessment as a student and normative beliefs about being a good student) was also found to play a crucial role, especially for those with a high commitment to the student role (Chartrand, 1990). Having high expectations that do not match one's achieved grades was also an antecedent (Cruwys et al., 2015).

Negative academic-related dispositions and attitudes Regarding other intrapersonal factors, non-motivated learning behaviors (Baker, 2004) and lack of autonomous motivation for study (Larcombe et al., 2022) were associated with greater psychological distress. Conversely, it has been found that high self-determined motivation for study (i.e., both intrinsic academic motivation and identified extrinsic motivation) leads to low levels of distress (Baker, 2004; Julien et al., 2009). Similarly, the lack of mastery learning goals (i.e., goals orientated towards the acquisition of competencies and not just performance) has been found to be predictive of students' distress (Casali et al., 2022).

Several studies have looked at study-related skills, and low self-regulatory learning strategies were found to be antecedents of student distress (Casali et al., 2022; Casali & Meneghetti, 2023). In addition, the perception of having little or no control, both over academic stress (Hirai et al., 2015) and over academic outcomes (Cruwys et al., 2015), and low study resilience have been shown to put students at risk of experiencing distress (Casali et al., 2022; Casali & Meneghetti, 2023), as did high levels of goal-directed rumination over learning-related problems (Krys et al., 2020).

Students with low academic purpose and low educational values (i.e., students who do not perceive university as important and valuable, who do not perceive their courses as rewarding, and who lack a sense of belonging and recognition in the university context) are at higher risk of experiencing APD (Andersen et al., 2021; Arauz et al., 2017; Renshaw & Bolognino., 2016). Academic doubt (Liu et al., 2015), low academic satisfaction (Renshaw & Bolognino, 2016; Tran et al., 2022), and low academic optimism (i.e., low expectancies for academic success; Solberg Nes et al., 2009), are also other antecedents that have emerged, as well as low academic grit (Renshaw & Bolognino, 2016), defined as a student's perseverance and passion for pursuing study-related goals.

Interpersonal factors

Perceptions of negative relationships with teachers Poorly rated quality of relationships between students and teachers was identified as a key antecedent of students' distress (Tyrrell, 1997). In particular, it was found that the perception of insensitive attitudes of teachers and the feeling of being treated unfairly contribute significantly to distress (Neville et al., 2004). Furthermore, feeling unsupported by faculty has been shown to be closely related to students' anxiety and depressive symptoms (Sharp & Theiler, 2018), with low levels of teacher support in relation to the basic psychological needs for autonomy, competence, and relatedness predicting emotional distress variables (Gilbert et al., 2021). In addition to low levels of perceived support, perceptions of a lack of interactivity with teachers were also found to be another antecedent (Morris et al., 2021).

Perceptions of negative relationships with peers Another antecedent that emerged from the literature was the perceived quality of relationships with fellow students. Low social integration and a low level of satisfaction and involvement in interpersonal interactions with peers at college contributed significantly to distress (Chartrand, 1992; Esquerda et al., 2023; Huang et al., 2020; Neville et al., 2004). Importantly, when experiences of need supportive/thwarting practices emitted by various academic sources were taken into account, levels of need thwarting by peers emerged as the strongest predictor of students' anxiety and depression (Gilbert et al., 2021). Lack of interactivity with university peers under COVID-19 (Morris et al., 2021) and low identification with university friendship (McIntyre et al., 2018) was found to be predictive of APD, with evidence suggesting that this effect may be mediated by loneliness.

Perceived parental expectations and lack of perceived academic-related family support Low perceived academic-related family support and high parental expectations were established as antecedents by several studies. Specifically, students' reported discrepancies between college performance and parental expectations have been found to be significantly associated with anger, depression, and anxiety (Kanter Agliata & Renk, 2009). In a qualitative work conducted during the COVID-19 pandemic, family needs interfering with studies were also cited as reasons for distress (Morris et al., 2021). The role that lack of perceived family academic support plays in predicting distress is especially true for first-generation (Morris et al., 2021) or ethnic minority students (Morris et al., 2021; Vasquez-Salgado et al., 2021), with this subset of students often reporting a discrepancy between academic demands and family environment. In particular, the study by Vasquez-Salgado et al. (2021) documented home-school value mismatch (i.e., a mismatch between family and academic obligations) as a predictor of feelings of psychological and physical distress.

Perceptions of negative academic climate The perceived quality of the academic climate is another antecedent of APD described in the literature. An early work by Tracey et al. (1986) identified lack of the fit between the student and the psychosocial environment of university halls of residence as one of the main reasons for students' distress. This aspect is confirmed in more recent work in which low ratings of the quality of the institutional environment, combined with a sense that the academic climate is not sufficiently motivating and does not provide opportunities for social participation and/or develop relationship skills, have been shown to be strong predictors of students' distress (Esquerda et al., 2023). Dissatisfaction with one's major/specialization and with the quality of the educational system, as well as low satisfaction with the quality of available academic advising and academic facilities, also play an important role (Chartrand, 1992; Omigbodun et al., 2006; Sharp & Theiler, 2018). In Gilbert and colleagues' studies (2021, 2023), main antecedents of psychological distress among students included the frustration of the three basic needs of autonomy, competence, and relatedness due to the institutional climate (i.e., the perception of inadequate or lack of support for students and the perception that networking activities are not encouraged or are considered a waste of time). Furthermore, perceptions of a less inclusive academic environment were associated with emotional distress variables in a sample of ethnic minority students (Neville et al., 2004).

Perceptions of study program and examinations In addition to students' relationships with teachers, peers, parental expectations and academic climate, the studies reviewed point to a fifth source of stress that lies across these four and cannot be specifically attributed to one of them, namely that related to learning, the study program, and exams. Students' feelings that learning is not student-centered and that active learning is hindered emerged as predictors of distress in several studies (Esquerda et al., 2023; Gilbert et al., 2021, 2023). Work overload and the perception of an extensive study program was another predictor of distress that has been widely documented in the literature (Larcombe et al., 2022; Huang et al., 2020; Gilbert et al., 2021, 2023; Omigbodun et al., 2006; Padrón et al., 2021; Peng et al., 2023; Tyrrell, 1997). Specifically, while the sacrifice of maintenance and leisure activities was shown to be unrelated to levels of psychological distress over the course of the academic year and was actually associated with better academic performance, sacrificing one's basic psychological needs due to

studying is on the contrary detrimental to health, with this effect being mediated by increased need frustration over the year (Holding et al., 2020). Assessment stress was reported as linked to depressive and anxiety symptoms in several studies (Lyndon et al., 2014; MycIntyre et al., 2018; Tyrrell, 1997). In particular, more direct evidence showed the existence of differences in distress between experimental groups that underwent examinations and control groups that did not (Oaten & Cheng, 2005; Steptoe et al., 1996). Longitudinal changes in distress have also been found at different stages of the academic year, peaking around examinations and other academic commitments such as thesis submission and declining thereafter (Cruwys et al., 2015; Oaten & Cheng, 2005).

Contributing factors

The literature reviewed identified a variety of factors that may prevent or increase the risk of APD, of which some are linked to students' socio-emotional and psychological capital, whereas others to stable characteristics, namely traits, socio-demographic, and identity-related variables.

Socio-emotional and psychological capital

Among the various contributing factors, the most commonly reported are coping strategies. In particular, reframing (directed either to cognitively restructure the stressor or behaviorally change the situation) and problem-oriented forms of coping (Morris et al., 2021; Padrón et al., 2021) were found to be protective against APD, even when academic stress was perceived as more severe (Morris et al., 2021). Acceptance (Arauz et al., 2017) – i.e., a mindfulness skill that involves being compassionately receptive and present with one's current experience (including unpleasant feelings and thoughts)– has been associated with low distress; conversely, cognitive fusion– i.e., the perception of one's thoughts as if they were real and true rather than thoughts, which means acting and allowing one's behavior to be dominated by them– was a factor predicting high risk for APD (Krafft et al., 2019).

Soft skills (i.e., perseverance, emotional intelligence, epistemic curiosity, creativity, and critical thinking) have been shown to be negatively associated to APD (Casali et al., 2022; Casali & Meneghetti, 2023). Other general individual regulatory abilities that also act as protective factors are self-efficacy (Chua et al., 2018), self-compassion (Kawamoto et al., 2023), and self-control, i.e., students' ability to resist short-term temptations in order to achieve important long-term goals (Gilbert et al., 2023).

Resilience (Chua et al., 2018; Mcdermott et al., 2020) is another factor that has been shown to have a buffering effect, particularly among those who perceive the campus climate as not supportive for students' wellbeing and mental health (Mcdermott et al., 2020). General dispositions such as hope (Mcdermott et al., 2015), identity purpose (Andersen et al., 2021), gratitude (Huang et al., 2020), and optimism (Chua et al., 2018) also have been found to protect against APD. Additionally, students who have multiple memberships with different sources from which they can draw support have been shown to be protected from APD (Cruwys et al., 2015). In particular, studies conducted predominantly with nontraditional students (i.e., students who occupy multiple identity roles, such as student workers or student parents) have found consistent protective effects stemming from general peer and family support (Chartrand, 1992; Fleming et al., 2018; Markin et al., 2021; Quimby & O'Brien, 2006).

Trait, socio-demographic, and identity variables

Some psychological trait variables as well as some socio-demographic and identity variables have also been shown to play a role in the development of APD. In particular, an insecure attachment style (Mcdermott et al., 2015; Quimby & O'Brien, 2006), high levels of maladaptive perfectionism (Kawamoto et al., 2023), and high neuroticism (Hirai et al., 2015) have been shown to increase the likelihood of a student experiencing APD. Furthermore, students with low levels of intolerance of uncertainty operationalized as a trait have been found to be more likely to report psychological distress outcomes (Casali et al., 2022).

Other risk factors were being first-generation university students (Cadaret & Bennett, 2019; House et al., 2020; Zakeri et al., 2021), having financial difficulties (Cadaret & Bennett, 2019; Korn et al., 2023; Omigbodun et al., 2006), and having a diagnosis of physical or mental disability (Coduti et al., 2016; Fleming et al., 2018). Students with co-occurring psychopathology are a particularly vulnerable group (Andersen et al., 2021; Ghosh et al., 2021; Fleming et al., 2018; Korn et al., 2023). In addition, there was evidence that perceived discrimination against ethnic minority students may be another factor contributing to APD (Cheng et al., 2020). Data from students who have sought counseling services at a university have shown that APD scores are high in this population (Glickman et al., 2023; Lockard et al., 2012; Broglia et al., 2017), with comparative studies finding that students who sought help from a university counseling center were more academically distressed than their non-help seeking counterparts (Glickman et al., 2023; Lockard et al., 2012). Finally, the COVID-19 pandemic has been found to be a situational risk factor that has influenced

both the prevalence and severity of APD (Horita et al., 2021, 2022; Tran et al., 2022).

Consequences

In the literature reviewed, APD was associated with a range of negative effects on both academics and mental health. Specifically, high APD scores were linked with student' attention and learning difficulties (Vasquez-Salgado et al., 2021), as well as dropping out (Solberg Nes et al., 2009; Samlan et al., 2021) or intending to drop out of college (Chartrand, 1992). Poor academic performance and low GPAs are another consequence reported in the included studies (Chua et al., 2018; Holding et al., 2020; Lyndon et al., 2014; Naz et al., 2020; Solberg Nes et al., 2009; Samlan et al., 2021; Vasquez-Salgado et al., 2021), with some evidence to suggest a bidirectional link. However, while findings from Buizza et al. (2022) and Peng et al. (2023) suggested that students with poorer grades are at higher risk, the opposite result was found in the study by Cruwys et al. (2015), with higher-achieving students shown to be more prone to developing academic-related distress.

A bidirectional relationship was also found between APD and academic adjustment, with the latter appearing to be simultaneously an antecedent (Buizza et al., 2022; Verger et al., 2009) and a consequence (Chartrand, 1992) of distress. Negative mental health outcomes included general anxiety (Jones et al., 2018; Zakeri et al., 2021), burnout, stress, psychosomatic symptoms, low global self-esteem, and general depressive symptoms (Korn et al., 2023; Yusoff et al., 2021).

Empirical referents

In the literature included in the current concept analysis, a variety of instruments were used, with the majority of the studies using non-specific measures of distress and only a small percentage employing tools specifically designed to detect APD.

Among the non-specific measures of distress, the most commonly used were: the *Depression*, *Stress and Anxiety Scale* (DASS; Lovibond, & Lovibond, 1995), the *General Health Questionnaire* (GHQ-12/28; Goldberg, 1988), the *Kessler scales* (K6/K10; Kessler et al., 2002), the 7-item *Generalized Anxiety Disorder Scale* (GAD-7; Spitzer et al., 2006), and the 9-item *Patient Health Questionnaire* (PHQ-9; Löwe et al., 2004).

In the studies addressing directly APD, the methods used to measure the construct were in almost all cases based on items developed ad hoc and used without prior validation. An exception is the Academic Distress subscale of the *Counseling Center Assessment of Psychological Symptoms* (CCAPS-62/34; Locke et al., 2011, 2012). The CCAPS-62 is a multidimensional instrument designed to assess the mental health of college students and comprised eight subscales: Depression, Eating Concerns, Substance Use, Generalized Anxiety, Hostility, Social Anxiety, Family Distress, and Academic Distress. Specifically, the Academic Distress subscale measures the following aspects: lack of academic motivation, loss of concentration and enjoyment, and lack of confidence in one's own ability to success academically. This subscale provides a useful and reliable measure to assess college students' distress in a way that is specifically tailored to their health needs. However, based on our work, this instrument does not cover all of the component dimensions of APD identified in the present concept analysis.

In one case (Buizza et al., 2022), APD was assessed using the *University Stress Scale* (USS; Stallman & Hurst, 2016), a measure that evaluates students' cognitive appraisal of stress across a variety of academic challenges. In this study, scores on the USS scale that exceeded a clinical cut-off were considered indicative of academic distress. However, as stress and psychological distress are distinct constructs and cannot be used as synonyms, the use of a stress scale to detect APD is conceptually problematic. Therefore, the examination of the current state of the literature suggests that standardized and conceptually sound instruments for the detection of APD are highly needed.

Case studies

Model case

Nicole is a first-generation university student who has enrolled in medical school. Nicole enrolled in college during the COVID-19 pandemic, which forced her to attend classes completely remotely for her first two years. Nicole feels like she can't find the motivation to study, so she has fallen far behind in her exams and her grade point average is low. She has difficulty concentrating and often suffers from a lack of energy; at the same time, the thought of university worries her so much that it often prevents her from sleeping. Last month, she was preparing for an exam, but she was so anxious that she could not remember anything and could not think clearly. When she stood in front of the teacher, she felt like her mind went blank and then froze. She has the feeling that the teachers are very critical of her and she has often felt humiliated by them. At home, Nicole feels very judged because of her poor performance. She does not feel supported by her parents and is convinced that they do not understand how difficult studying can be. Nicole therefore feels that she has no one to talk to about her difficulties. She has not made any significant friendships at university, feels lonely and out of place and has therefore stopped attending classes. Nicole believes that she does not have the necessary

skills to succeed academically, while she feels that her peers are all more competent than she is. When she thinks about university, Nicole considers herself hopeless and completely worthless as a student. Recently, she has seriously considered dropping out of university.

Borderline case

Kate is a second-year psychology student. Kate is a high-achieving student and her grade point average is very high. However, she believes that her perfectionism has caused her to fall behind in her studies as she wants to perform as perfectly as possible. The thought of exams causes her great anxiety and Kate generally deals with this using passive coping strategies, i.e. she avoids the source of the stress. As a result, Kate tends to procrastinate. During exam periods, she locks herself in her room and stays away from friends and parents, often resulting in an escalating cycle of frustration, anger, and irritability. Although Kate enjoys studying, she feels completely overwhelmed during exam periods and often suffers from insomnia. She finds it difficult to create an effective study plan and worries about how to manage her studies and meet deadlines. Kate also feels that her parents have very high expectations of her and she is afraid of disappointing them. She complains about the competitiveness and lack of interactivity among the students, while on the contrary she sees the teachers as available figures who give her positive feedback and by whom she feels valued. Indeed, she considers herself a capable student and is firmly convinced that it is worth continuing to invest in her chosen profession.

This is a borderline case because although some of the characteristics of APD are present (anxiety, anger, irritability, and somatic component), other defining attributes are missing, namely worthlessness as a student, loss of interest in academic matters, academic anhedonia, lack of motivation, and lack of concentration in learning.

Contrary case

Carl is an engineering student. He has poor grades and often fails exams. Carl is dissatisfied with the university and complains about various shortcomings in the system. In particular, Carl feels that the teachers are unapproachable and not interested in giving him feedback. He feels that the university is not responsive to students' needs and complains that there are not enough facilities and resources for students at the institution he attends. He also feels that the curriculum is too extensive and hinders his efforts to strike a balance between his studies and personal life. However, Carl is a Rep student (student representative) and he is well adjusted to the social academic environment. Carl also has several friends outside of the university that he can turn to for support when he fails. Additionally, Carl has a general life disposition that is mainly based on optimism and perseverance, and he usually deals with stressful events and frustrations in a problem-oriented way. Therefore, when he fails, he tries to understand why the exam went wrong and cognitively restructures the situation by telling himself that the professors do not evaluate him as a person, but only his current performance. Since he lacks good strategies and successful functional learning methods, he has recently tried to overcome this limitation by getting help from colleagues, which also helps him to stay motivated.

Carl's case is a contrary case, because despite presenting a number of antecedents that make him an at-risk student (i.e., perceptions of negative relationships with teachers, perceptions of negative academic climate, negative perceptions of study program and examinations, and lack of effective learning strategies), Carl also has many socio-emotional capital factors (availability and use of adaptive coping strategies, self-compassion, perceived support from friends, optimism, grit) that act as a buffer and protect him from APD.

Discussion

The aim of this study was to conduct a concept analysis of the APD construct, based on which APD can be defined as a domain-specific form of distress that refers to a state of emotional suffering that a student may experience in response to perceived stressors in the academic environment. As for the structure of APD, it encompasses several domains, namely the affective domain (mainly characterized by symptoms of anxiety and depression), the cognitive domain, the somatic domain and the social domain. Conceptual clarification of APD is crucial for researchers and practitioners to develop effective interventions to treat the unique spectrum of emotional problems that students may face when adjusting to the university context. In this sense, our findings could represent the starting point for informing intervention trajectories specifically tailored to the health needs of this population.

The results of our analysis appear to confirm a wealth of evidence suggesting that the stressful tasks associated with higher education can be difficult for some students to cope with and, in some cases, lead to the activation of various forms and levels of suffering (Bewick et al., 2010; Sharp & Theiler, 2018; Zurlo et al., 2020). Although the situational demands of the academic context are certainly inherently stressful, students' negative affective reactions to them are by no means an inevitable or predictable outcome. Indeed, it is well documented in the literature that a certain amount of stress can actually be functional for students and ultimately

lead to better academic performance– the so-called facilitative stress (Strack & Esteves, 2015; Teigen, 1994). Understanding how and why the transition from stress to distress occurs for some students is therefore crucial, especially considering the wide range of negative consequences of APD that we found in our analysis, not only in terms of academic performance, but also in terms of mental health.

Based on the literature reviewed, our analysis emphasized the role that a number of study-related factors play as antecedents for the development of APD. These antecedents can be divided into two main categories, namely interpersonal factors and intrapersonal factors. Specifically, intrapersonal factors relate to students' experiences with different aspects of the academic context, while intrapersonal factors are related to students' academic self-perceptions as well as their perceived study-related abilities. This is in line with Lazarus' (2006) transactional theory of stress, according to which psychological distress is a negative affective reaction resulting from the intertwining of two sets of appraisals: the interpretation of the context as threatening on the one hand, and the perception of one's own inability to cope successfully with this threat on the other (i.e., low self-efficacy, low perceived situational control). Similarly, the results of the present analysis showed that APD can be conceptualized as the result of two factors: (a) a negative perception of oneself as a student, and (b) a negative perception of the academic context. In relation to the first point, the results of our analysis appear to confirm a wealth of evidence documenting the negative impact of low academic self-concept on a range of academic outcomes, such as test anxiety (Khalaila, 2015), low academic adjustment (Karaman et al., 2021), and poor grades (Marsh & Martin, 2011; Wu et al., 2021), over and above prior achievement. Other intrapersonal factors that have been shown to be crucial in predicting APD are motivation and values. This is in line with the results of studies conducted in other contexts (e.g., in the workplace), where low work values (Basinska & Dåderman, 2019) and low autonomous motivation (Li et al., 2013; Trépanier et al., 2020) were found to be related to constructs conceptually similar to distress, such as burnout.

In relation to the interpersonal factors, our analysis has allowed the isolation of five main environmental sources of academic stress that can provoke negative emotional reactions in students: teachers, peers, parental expectations, the global academic climate, and study program and examinations. For example, in two studies included in our concept analysis (Gilbert et al., 2021, 2023), students' distress was significantly predicted by the perception that each of these sources did fail to meet and/or threatened their basic psychological needs for autonomy, competence, and control. Overall, these results suggest that APD is a state of suffering that arises from a perceived discrepancy between one's own needs and resources/abilities on the one hand and the demands and supplies of the academic environment on the other. This view could also explain the increased incidence of APD among at-risk groups such as students with disabilities or first-generation students, who may be less equipped to deal with the challenges of entering university compared to their peers. Clearly, this is an aspect that should be considered both in the development of interventions for APD and by policy makers and educational institutions to continue to provide resources and tools so that all students can benefit as much as possible from the university experience.

Although the above-mentioned antecedents are the *sine qua non* for the occurrence of APD, their presence alone is not sufficient to cause distress. Accordingly, our conceptual analysis points to a variety of general factors that interact with the academic antecedents to increase or decrease the likelihood that a student will experience APD. Among the various contributing factors, dispositional dysfunctional coping and maladaptive personality variables are most commonly cited. This is consistent with diathesis-stress models of anxiety and depression (Braet et al., 2013), according to which environmental stressors may only be detrimental if individual vulnerabilities are present that cause higher sensitivity to these factors. As mentioned above, these include socio demographics and identity variables such as being a first-generation student or having disabilities (both physical and psychological) or having financial difficulties. In addition to these, trait characteristics such as neuroticism and perfectionism are also seen to be major contributors to APD, confirming the literature which suggests that these traits (Luyten et al., 2011; Hankin, 2010) are associated with mental ill-being outcomes through both stress generation and increased stress sensitivity mechanisms.

Another important contributing factors that have proven to be fundamental are coping strategies. This result is in line with a well-established literature on the protective role of a functional and flexible use of coping strategies in buffering the effects of stress on mental health (Wheaton, 1985). As these factors are highly modifiable, they are easy targets for possible future lines of intervention.

Three major limitations must be taken into account when interpreting our results. First, the keywords used, the limitation of the search to only three databases, and the exclusion of articles published in non-English languages and in non-peer-reviewed journals may have limited the results. Second, our results only refer to academic distress at universities. Therefore, future studies should focus on other student populations to investigate whether the conceptual structure of APD as it emerges from our analysis is applicable to other educational levels, while also exploring potential differences. The final limitation concerns the fact that, although we included studies from around the world, we did not examine whether there are differences in APD between students of different

nationalities or whether the studies from different cultural backgrounds focused on different aspects of APD. Given the large differences in the organization of educational systems and in the characteristics of the labor market between different cultural realities, future work could aim to conduct cross-national comparative analyses. Notwithstanding these limitations, our work has the potential to provide some significant implications for clinical practice.

Implications for clinical practice

As APD has been shown in our analysis to be a multifaceted phenomenon, it cannot be addressed with a single universal intervention that is suitable for every student. Rather, it is necessary to develop tiered approaches that are classified according to the main academic sources from which each student's APD is derived, as well as the severity of the problem. In what follows, we propose three different levels of intervention, the first concerning the community-institutional level and the second and third the different degrees of intensity at the individual level.

At a first level, policymakers and educational institutions can work together to develop systemic interventions to promote a better institutional climate. In fact, while many of the academic stressors cannot be eliminated and are even conducive to students' personal growth and learning, organizing contextual practices that promote students' needs for autonomy, relatedness, and competence is fundamental to promoting well-being and mental health and preventing the onset of emotional ill-being outcomes. In particular, promoting a culture of inclusion and active participation (both at the level of vertical interactions with faculty and at the level of horizontal interactions between peers) within the university that fosters a sense of belonging and engagement can be a significant prevention strategy (Freda et al., 2021). Promoting an anti-discriminatory culture at university may also be useful, as our findings show that perceptions of a discriminatory and less inclusive academic environment are a crucial factor in predicting APD among minority university students (Cheng et al., 2020; Neville et al., 2004). Furthermore, consistent with the literature indicating the importance of interpersonal stressors in explaining the onset of depressive and anxiety symptoms in adolescents and young adults (Auerbach et al., 2014), the study by Gilbert et al. (2021) found that perceptions of peer relationships characterized by disinterest and lack of connectedness most strongly predicted student distress. Given the importance of peer recognition for youth (Kochel et al., 2012) and the well-documented centrality of positive peer relationships in university adjustment (Maunder, 2018; Swenson et al., 2008), educational institutions should create opportunities for peers to meet and socialize to support positive identification among students and foster and/or reinforce a sense of belonging to the context. Indications of further potential community-level strategies emerge from our findings that academic goals and values play a role in predicting/buffering the occurrence of APD (Andersen et al., 2021; Arauz et al., 2017; Renshaw & Bolognino, 2016). In this sense, focusing teaching methods on communicating the value of the study program, both in terms of professional goals and personal life in general, while actively promoting student engagement and motivation may be another viable way to support the health needs of this population.

On a second level, we believe that there should be low-intensity interventions aimed directly at students that can be delivered both in groups(e.g., Amodeo et al., 2017; Freda et al., 2016; Passeggia et al., 2023; Scandurra et al., 2018) and individually. Since the results of our analysis have shown that low self-regulated learning strategies, low study skills, and low ability to manage time and organize study autonomously (Casali et al., 2022; Casali & Meneghetti, 2023; Larcombe et al., 2022) are all crucial antecedents of APD, the development of interventions aimed at instilling healthy study habits in students may be potentially useful. Such interventions could be delivered through a variety of formats and techniques that have already been shown to be beneficial for university students, such as self-management programs, peer tutoring, self-help tools, etc. (Hanson et al., 2016; Martino et al., 2022; Short et al., 2010).

Finally, a third tier would place moderate to high-intensity interventions for students whose APD exceeds a clinical threshold. The goal of such interventions would be twofold: to "correct" the biases in students' appraisals by promoting a more realistic evaluation of sources of stress in the academic context, and to work toward implementing the factors that our analysis has shown to mitigate the impact of university stressors on mental health, i.e., to increase students' access to adaptive coping strategies. Potential intervention models that could be used include cognitive behavioral protocols (Conley et al., 2013; Powers et al., 2017; Smits et al., 2012), Acceptance and Commitment Therapy (Twohig & Levin, 2017; Coto-Lesmes et al., 2020), and interpersonally-oriented psychodynamic interventions (Crits-Christoph et al., 2005; Lemma et al., 2010). These intervention models have indeed been shown to be effective in the treatment of anxious and depressive symptoms, with evidence suggesting that these effects are mediated by changes in interpersonal threat appraisal and self-perception, as well as the development of more functional coping and emotion regulation strategies. However, as APD is an emerging construct for which there is as yet no theoretical basis, theory-driven research should be conducted to test the adaptability of different evidence-based models while examining their comparative effectiveness.

To successfully implement such a tiered intervention approach, a validated measure of APD needs to be developed

to helps distinguish between the different psychological needs of students in order to understand which intervention is most appropriate for them. Our analysis has shown that such a measure is currently lacking, as students' emotional problems are either measured with general measures of distress or alternatively with stress assessment instruments. However, the use of academic stress measures to detect APD has significant limitations, as the available stress instrument focuses only on the spectrum of environmental stressors without including the assessment of students' negative emotional responses to these stressors. At the same time, a non-specific measure of distress can easily overlook all those situations that do not fall within the domain of overt and defined anxious and depressive symptomatology, even when there are clear signs of distress related to the academic context. Consequently, the development of a domain-specific measure of student distress is a necessary step in the collection of epidemiologic data that will allow a clear distinction between students whose distress is a negative emotional reaction to the academic context and those for whom this is not the case. Importantly, an APD assessment scale should also include a clinical cut-off score that allows identification of those students with severe levels of APD who require clinical interventions.

Conclusions

The present study provided a conceptual clarification of the construct of APD. Having identified the key characteristics, antecedents, consequences, and contributing factors of APD, our findings can form the basis for future research to develop this concept further. Focusing research efforts on APD will allow for the development of more targeted clinical interventions for students while shedding light on the importance of educational practices that are better tailored to the needs of this population.

Appendix

Table 1 Summary of studies included in the systematic review

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Andersen et al. (2021)	Canada	Quantitative cross-sectional study	$N = 1{,}010$ students	3 ad hoc items	Academic purpose	Frequently feeling too anxious, depressed, or overwhelmed to study	-Purpose in life -Identity distress -Psychopathology	
Arauz et al. (2017)	USA	Quantitative cross-sectional study	$N = 186$ first-year students	DASS-21	Educational values	- Depression - Anxiety	Acceptance	
Baker (2004)	UK	Quantitative cross-sectional study	$N = 91$ second-year psychology undergraduates	GHQ-12	Academic amotivation			
Broglia et al. (2017)	UK	Quantitative cross-sectional study	$N = 294$ help-seeking students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically		

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Buizza et al. (2022)	Italy	Quantitative cross-sectional study	$N = 3{,}754$ students	USS	Academic performance (low GPA vs. high GPA)	High levels of academic stress	- Risky drug use - Students' major (medical students)	
Cadaret and Benett (2019)	USA	Quantitative cross-sectional study	$N = 3{,}303$ students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	- First generation status - Financial stress	
Casali and Meneghetti (2023)	Italy	Quantitative cross-sectional study	$N = 606$ students	DASS-21	- Motivational beliefs (academic self-efficacy, mastering learning goals) - Study resilience - Self-regulating learning - Study-related emotions	General emotional suffering, characterized by symptoms of depression and anxiety	- Soft skills	
Casali et al. (2022)	Italy	Quantitative longitudinal study	$N = 331$ students	DASS-21	- Motivational beliefs (academic self-efficacy, mastering learning goals) under COVID-19 - Study resilience under COVID-19 - Self-regulating learning under COVID-19 - Study-related emotions under COVID-19	General emotional suffering, characterized by symptoms of depression and anxiety	- Soft skills - Intolerance of uncertainty	
Chartrand (1992)	USA	Quantitative cross-sectional study	$N = 347$ non-traditional students	20-item psychological distress scale of the STQ	- Low Satisfaction with courses and advising - Low Social integration - Low Academic adjustment	Symptoms of psychological and physical strain	-Family support -Friend support	- Not intending to continue in college - Academic adjustment

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Chartrand (1990)	USA	Quantitative longitudinal study	$N = 179$ non-traditional students	- STAI-Y (State scale) - BDI	-Student Self-Role Incongruence -Student role commitment	- Anxiety - Depression		
Cheng et al. (2020)	USA	Quantitative longitudinal study	$N = 203$ Latinx college students	Academic Distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	Perceived discrimination	
Chua et al. (2018)	Malaysia	Quantitative cross-sectional study	$N = 183$ students	Academic Distress measure adapted from the Distress Scale			Psychological capital (self-efficacy, hope, resilience, and optimism)	Academic performance (GPA)
Coduti et al. (2016)	USA	Quantitative cross-sectional study	$N = 5{,}696$ students in counseling $N = 1{,}620$ students not in counseling	Academic distress subscale of the CCPAS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	Documented and diagnosed disability (learning, sensory, physical, or psychological)	
Cruwys et al. (2015)	Australia	Mixed-methods longitudinal study	$N = 141$ psychology fourth-year honor students	CES-D-20	- Educational bottleneck - Perceived control over academic outcomes - Higher academic achievement - Discrepancy between students' grade aspirations and their achieved grade	Depression	Multiple group memberships	

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Esquerda et al. (2023)	Spain	Quantitative cross-sectional study	$N = 4{,}374$ medical students	SCL-95	Negative academic self-perceptions; Negative perception of learning; Negative perceptions of teachers; Negative social self-perceptions; Negative perceptions of the academic atmosphere	Psychopathological symptoms (i.e., depression, anxiety, phobic anxiety, somatization, obsessive compulsive, interpersonal sensitivity, hostility, paranoid ideation, and psychoticism)		
Fleming et al. (2018)	USA	Quantitative cross-sectional study	$N = 1{,}774$ treatment-seeking students with disabilities (ADHD, learning disability, mental health, hearing impairment, visual impairment, mobility impairment, physical or health-related disorders, and other)	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	- Type of diagnosis (attention deficit-hyperactivity disorder, ADHD) - Depression - Self-harm - Trauma or Victimization - Stress and Academic performance - Social support from family and peers	
Ghosh et al. (2021)	USA	Quantitative cross-sectional study	$N = 2{,}836$ military and non-military students	Academic distress subscale of the CCAPS-62/34		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	- Depression - Generalized Anxiety - Social Anxiety	
Gilbert et al. (2021)	Canada	Quantitative cross-sectional study	$N = 1{,}797$ students	- GAD-7 - PHQ-9	- Need-supportive/thwarting practices by teachers, peers, and relative to study programs - Academic-related need satisfaction and frustration	- Anxiety - Depression		

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Gilbert et al. (2023)	Canada	Quantitative two-wave study with Two Time Points (12 months apart)	*N* Total = 2450 students *N* Time1 = 1783 students *N* Time2 = 1053 students	- GAD-7 - PHQ-9	- Need-supportive/thwarting practices by teachers, peers, and relative to study programs - Academic-related need satisfaction and frustration	- Anxiety - Depression	Self-control	
Glickman et al. (2023)	USA	Quantitative cross-sectional study	*N* = 347 predominantly ethically minority students	Academic Distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	Utilization of college counseling services	
Hirai et al. (2015)	USA	Quantitative longitudinal study	*N* = 248 first-year international students	DASS-21	Perceived present control over academic stress	- Depression - Anxiety - Stress symptoms	Neuroticism	
Holding et al. (2020)	Canada	3-wave quantitative longitudinal study with two samples	Sample 1: *N* = 352 students Sample 2: *N* = 217 students	- CES-R-10 - NA subscale of PANAS	- Academic-related psychological need sacrifice - Academic-related need frustration	- Depressive symptoms - Negative affect (feelings of distress, guilt, upset, hostility, fear, irritability, shame, nervousness, scare, fear, jittery)		Career goals progress
Horita et al. (2021)	Japan	Quantitative repeated cross-sectional study	Sample Time 1 (2019): *N* = 400 first-year students Sample Time 2 (2020): *N* = 766 first-year students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	COVID-19	

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Horita et al. (2022)	Japan	Quantitative repeated cross-sectional study (Time 1, Time 2, Time 3)	$N = 400$ at Time 1, $N = 766$ at Time 2, and $N = 738$ at Time 3	Academic distress subscale of the CCAPS-Japanese		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	COVID-19	
House et al. (2020)	USA	Quantitative cross-sectional study	$N = 1,355$ students seeking services at a university counseling center	Academic distress subscale of the CCAPS-34		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	First-generation status	
Huang et al. (2020)	China	Quantitative cross-sectional study	$N = 895$ students	K6	- University stress (time pressures, work overload, volume of coursework) - Student-to-student incivility (students' perceptions of incivility of classmates towards them)		Gratitude	
Jones et al. (2018)	USA, Canada, UK	Longitudinal quantitative study	$N = 80,509$ students	Academic distress of the CCAPS-62/34		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically		Anxiety

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Julien et al. (2009)	Canada	Quantitative longitudinal five-year prospective study	$N = 1{,}039$ students	PSIS and the paranoid ideations subscale from the SCL-90	Academic self-determined motivation	- Depression - Anxiety - Irritability - Paranoid ideations		
Kanter Agliata and Renk (2009)	USA	Cross-sectional quantitative study	$N = 105$ psychology students		Students' parents expectations discrepancies	- Anger - Depression - Anxiety	Students' perceptions of their communication reciprocity with parents	
Kawamoto et al. (2023)	USA	Quantitative cross-sectional study	$N = 3{,}112$ students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	- Maladaptive perfectionism - Self-compassion	
Korn et al. (2023)	Israel	Quantitative cross-sectional study	$N = 1{,}400$ students	5 ad hoc questions		COVID-19-related health or financial hardship interfering with the student's academic performance	- Depressive symptoms - Lower family economic status before COVID-19	- Stress - Negative psycho-somatic symptoms - Changes in weight since COVID-19 - Low self-esteem - Depressive symptoms - Higher COVID-19 concerns - Higher security situation concerns
Krafft et al. (2019)	USA	Longitudinal quantitative study	$N = 339$ students	Academic distress subscale of the CCAPS-34		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	Cognitive fusion	

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Krys et al. (2020)	Germany	Quantitative longitudinal study	$N = 147$ students	- PSS - KAB	Goal-directed rumination over learning-related problems	- University-related perceived stress (i.e., the degree to which the current academic demands were perceived as unpredictable and excessive) - Strain dimensions (tense vs. calm, restless vs. relaxed, uneasy vs. comfortable)		Academic performance
Larcombe et al. (2022)	Australia	Quantitative cross-sectional study	$N = 4,575$ students	DASS-21	Course experiences (work overload; lack of autonomous motivation for study)	- Depression - Anxiety - Stress symptoms		
Liu et al. (2015)	USA	Mixed-methods cross-sectional study	$N = 112$ first-year medical students	4-items index of burnout, depression, stress, and loss of empathy	Academic doubt	- Depression - Burnout - Emotional hardening		
Lockard et al. (2012)	USA	Quantitative repeated measures design study	$N = 128$ (31 students receiving counseling and 79 non-help seeking students) Clinical sample ($N = 49$) Nonclinical sample ($N = 79$)	Academic distress subscale of the CCAPS-62/34		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study Lack of confidence in one's own ability to success academically	Utilization of college counseling services	
Lyndon et al. (2014)	Predominantly USA and India	Systematic review	Medical students		Academic assessment	- Assessment stress - Assessment anxiety		Assessment performance
Markin et al. (2021)	Predominantly USA	Quantitative cross-sectional study	$N = 154$ pregnant treatment-seeking students $N = 154$ matched case–control treatment-seeking students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	Peer and family support	

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Mcdermott et al. (2015)	USA	Quantitative cross-sectional study	$N = 2,644$ students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	- Hope - Adult Attachment Style	
Mcdermott et al. (2020)	USA	Quantitative cross-sectional study	$N = 933$ nursing students	2 ad hoc items	Perceptions of campus climate	- Negative academic impact due to psychological distress - Perceived ability to persist to graduation	- Resilience - Flourishing - Depression	
McIntyre et al. (2018)	UK	Quantitative cross-sectional study	$N = 1,135$ students	- GAD-7 - PHQ-9	- Assessment stress - Identification with university friends	- Anxiety - Depression	Loneliness	
Morris et al. (2021)	USA	Longitudinal mixed-methods study	Time 1 ($N = 253$) Time 2 ($N = 147$)	- BDI-II - Trait subscale of the STAI - UCLA Loneliness Scale - PSS; - 4 ad-hoc items assessing negative affect	Covid-19 academic related stressors (lack of interactivity with instructors; isolation from peers; difficulty in balancing between academic and family need)	- Depressive symptoms - Anxiety - Stress - Loneliness - Feelings of frustration and fear		Coping
Naz et al. (2020)	Pakistan	Quantitative cross-sectional study	$N = 480$ Natural and Social Sciences students	Ah-hoc academic distress questionnaire		- Lack of confidence for academic success - Lack of concentration - Lack of academic motivation - Worry about understanding lectures - Get depressed after taking a test - Freeze up during final exam - Worry about results		Academic Achievement

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Neville et al. (2004)	USA	Quantitative cross-sectional study	$N = 260$ African American students	GSI of the BSI	Perceived student stress (race-related stress, psychological/interpersonal stress, and academic stress)			
Oaten and Cheng (2005)	Australia	Two longitudinal studies with two experimental sessions (separated by a 4–week interim period)	$N = 57$ students Exam-stress group: ($N =$ 30) Control group: ($N =$27)	GHQ-28	Exam stress	- Anxiety - Insomnia - Somatic symptoms - Social and cognitive dysfunction - Depression		
Omigbodun et al (2006)	Nigeria	Mixed-methods cross-sectional study	$N = 1,119$ health care profession students	GHQ-12	Academic stressors (recurrent strikes by faculty, excessive school work, academic-related financial problems, lack of time/facilities for recreation)	Psychological disorders	- Family problems - Financial and health problems	
Padrón et al. (2021)	Spain	Quantitative cross-sectional study	$N = 932$ students	- GAD-7 - PHQ-8 - BIT	Covid-19 related academic stressors (academic future, task overload)	- Anxiety - Depression - Irritability	Coping	
Peng et al. (2023)	Predominatly Asia, East Asia, Europe, South America, North America, and Africa	Systematic review and meta-analysis	$N = 198,000$ medical students (201 studies)	- GHQ12 - K10 - K6 - SRQ20	Covid-19 academic-related stress (low academic performance; heavy academic burden; fear of education impairment, online learning trouble and dissatisfaction)			
Quimby and O'Brien (2006)	USA	Quantitative cross-sectional study	$N = 209$ nontraditional female undergraduate students with children	BSI	Student self-efficacy		- Attachment - Parent self-efficacy - Perceived social support	

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Renshaw and Bolognino (2016)	USA	Quantitative cross-sectional	*N* =584 students	- DASS-21-D - PANAS-N	Low college students' covitality (academic efficacy, college gratitude, school connectedness, and academic satisfaction)	- Depression - Negative affect (feelings of distress, guilt, upset, hostility, fear, irritability, shame, nervousness, scare, fear, jittery)		
Samlan et al. (2021)	USA	Quantitative longitudinal study	*N* = 297 first-year students seeking psychological services	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically		- Academic performance (GPA) - Drop-out
Sharp and Theiler (2018)	Different geographical areas	Review		-HADS -TSI (dysphoria domain) -CORE-10 -MINI -BDI -GHQ -SF-36 -K10	-Number of hours spent studying per week -Academic achievement -Feeling unsupported by teachers and faculty -Dissatisfaction with one's course/specialization, the quality of the education system, or the quality of available university facilities	- Anxiety - Depression - Somatic complaints		
Solberg Nes et al. (2009)	USA	Quantitative cross-sectional study	*N* = 2,189 students	9-item distress scale	Academic optimism	- Loneliness - Stress - Negative appraisals		- Academic performance (GPA) - Retention
Stallman et al. (2016)	Australia	Quantitative cross-sectional study	N = 2,596 students	K10	University stress	- Depression - Anxiety		

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Steptoe et al. (1996)	UK	Quantitative longitudinal study	Exam-stress group (N = 115) Control group: (N = 65)	GHQ-28	Academic examination	- Anxiety - Insomnia - Somatic symptoms - Social and cognitive dysfunction - Depression		
Tracey et al. (1986)	USA	Quantitative cross-sectional study	*N* = 152 students	- FPS subscale of the BEQ - STAI	Discrepancy in the fit between the student and the psychosocial environment of university halls of residence (innovation, involvement, traditional social orientation, student influence, order and organization, competition, academic achievement, intellectuality, social support, and independence)	- State Anxiety - Frequency of physical symptoms		
Tran et al. (2022)	Switzerland	Quantitative cross-sectional study	*N* = 433 first- to third-year students of health-related tracks	- HADS - PSS	- Academic satisfaction - Stress due to the learning experience related to COVID-19	- Depression - Anxiety - Stress		
Tyrrell (1997)	Different geographical areas	Literature review			Academic stressors (heavy workloads, frequent examinations, adjusting to the demands of professional training, low rated quality of student/staff relationships)	- Anxiety - Somatic factors - Social dysfunction - Depression		
Vasquez-Salgado et al. (2021)	USA	Quantitative cross-sectional study	*N* = 155 students	- Profile of Mood States - Huynh and Fuligni's measure of physical complaints	Home-School Cultural Value Mismatch	Feelings of mental and physical distress		- Students' attention and learning difficulties - Academic performance (GPA)
Verger et al. (2009)	France	Quantitative cross-sectional study	*N* = 1,743 students	MHI-5 module of the SF36	Lack of adjustment to the university environment	Anxio-depressive symptoms		

Table 1 (continued)

Authors	Location	Method	Sample size	Distress measures	Antecedents	Defining attributes	Contributing factors	Consequences
Yusoff et al. (2021)	Malaysia	Quantitative cross-sectional study	*N*=241second-year medical students	DASS-21	Academic stress	- Depression - Anxiety - Stress		Burnout
Zakeri et al. (2021)	USA	Quantitative cross-sectional study	*N* = 238 first, second and third professional year PharmD students	Academic distress subscale of the CCAPS-62		- Lack of academic motivation - Lack of concentration - Lack of enjoyment of classes and study - Lack of confidence in one's own ability to success academically	First-generation status	General anxiety

Notes: *N* number, *STAI* state-trait anxiety inventory, *BDI* beck depression inventory, *DASS* depression anxiety and stress scale, *HADS* hospital anxiety and depression scale, *TSI* trauma symptom inventory, *CORE-OM* clinical outcomes in routine evaluation-outcome measure, *MINI* mini international neuropsychiatric interview, *GHQ* general health questionnaire, *SF* short-form health survey, *HSQ* health status questionnaire, *K6/K10* Kessler measure of psychological distress, *BFI* brief irritability test, *SCL-95* symptom checklist-95, *PSS* perceived stress scale, *KAB* short questionnaire for current strain, *STQ* student transition questionnaire, *BDI-II* beck depression inventory-II, *CCAPS* counseling center assessment of psychological symptoms, *FPS* frequency of physical symptoms, *BEQ* biographical and experience questionnaire, *USS* university stress scale, *BSI* brief symptom inventory, *MHI* mental health inventory, *CES-D-R* center for epidemiologic studies depression-revised, *NA* negative affect, *PANAS* positive and negative affect schedule, *PSIS* psychiatric symptoms index subscales, *GSI* global severity index, *BAI* beck anxiety inventory, *GAD* generalized anxiety disorder scale

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